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THE PRESENT STATUS OF VITAMINES

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It is not a simple undertaking to summarize even the more important points in the recent literature on vitamins, because the subject has been developing very fast during the last few years, and parts of it are still much in debate. Not only has information been gained from laboratory research but from observations of the tragic human experience with inadequate war diets.

The material is considered under the headings of the three vitamins now recognized—fat-soluble A, present in butter fat, cod-liver oil, green leaves, etc., the absence of which results often in the eye disease xerophthalmia; water-soluble B, fairly widely distributed in plants, and necessary to prevent polyneuritis or beri-beri; and water-soluble C, the antiscorbutic vitamin. All are necessary for the best growth.

FAT-SOLUBLE A

Dr. H. Gideon Wells² of the Department of Pathology of the University of Chicago, who served in Roumania under the Red Cross, tells a dramatic story showing the need of this vitamin for children. The scanty diet in Roumania, when he arrived, consisted of little more than a limited amount of corn-meal and quantities of a very thin bran-vegetable soup. There was no milk nor butter, for the Austrians had driven off the cows. Many of the children had eye disease, sometimes so severe

¹ The authors wish to thank Dr. Lafayette B. Mendel and Dr. E. V. McCollum for reading this paper and making important suggestions.

² Personal communication.

as to cause blindness. There also was much of the distressing swollen condition known as war-edema, the latter probably due to the low calories and especially the low protein of the diet. Dr. Wells, at the height of his difficulties in getting food of any kind, learned of a vessel which had put into Archangel with cod-liver oil as its entire cargo. Through the efforts of the Red Cross all of it was sent down, and it saved the lives of many of the children. After their long fat starvation, they took readily what might have been refused under happier circumstances.

Not only xerophthalmia but rickets may be connected with lack of the fat-soluble vitamine. Work by Mellanby (1) on puppies seems to point in this direction, and possibly that of Hess and Unger (2) on the value of cod-liver oil in curing and preventing rickets in negro infants.

The need for fat-soluble A is not limited to children or young animals in general. Drummond (3), in London, has shown that as young rats approach maturity their requirement becomes markedly less. They can even live without it in apparently good health for considerable time, but sooner or later they lose weight and often have eye disease. They also show a distinct decrease in resistance to various infections, many deaths from infectious disease occurring. The older the young rats are the longer they can stand the inadequate diet before their decline. Dr. McCollum in his lectures has reported what he believes to be a similar pathological eye effect in adult human beings in certain northern lumber camps where the only fat is cured bacon and where the diet must be almost completely lacking in A. A condition known as "night-blindness" is prevalent—a defect of eyesight not noticed by the non-reading laborer till the dim light of night. "There is therefore every reason," says Drummond, "that great care should be taken to ensure that dietaries of adults contain an adequate supply of foodstuffs in which the fat-soluble A is present."

The fat-soluble vitamine occurs in more foods than was at first thought, but in variable quantities. Butter fat is still regarded as the most important source, but the quantity (4) therein depends upon the quantity of A in the feed of the cow and upon the manipulation of the butter itself. (See below in connection with stability.) Whale oil is another fairly rich source, though not so rich as butter. Drummond (5), with carefully standardized methods of feeding young rats and noting the change of weight, if any, week by week, found that he obtained about the same satisfactory growth when the fat-soluble A came wholly from 8 per cent

butter fat or 20 per cent whale oil. McCollum (6) has found even smaller amounts of butter fat entirely satisfactory—as little as 3 per cent. Fish oils in general, and fat fish may serve as valuable sources. Oleo oil, as shown by Osborne and Mendel several years ago, contains a fair amount of it, and so do oleomargarines made from oleo oil, but not the nut margarines made wholly from vegetable oils (8). However, as Steenbock (4) says, “Oleomargarines . . . are not to be considered in the same class as good butter in providing the organism with the fat-soluble vitamine.” Pig’s liver oil, and liver tissue, kidney tissue, probably glandular organs in general (9) give fair supplies—that is, that portion of the animal of which we eat little is far superior to the skeleton muscle of which we eat much.

Of the vegetable sources we know even better than formerly the value of spinach. Osborne and Mendel (10) fed rats dried spinach to the extent of 5 per cent of the diet as their only source of fat-soluble vitamine for eighty-seven and eighty-three days; then substituted the spinach by yeast, which is free from the fat-soluble vitamine, containing only the water-soluble. The rats continued to thrive for ninety-three and ninety-seven days more; that is, they had stored up enough of the fat-soluble vitamine from the spinach to last through the long period of deprivation. Cabbage is not so satisfactory. Carrots (11), although not leaves, have some fat-soluble A; peas (12) a small amount. So, too, possibly do bananas (13). Yellow corn (14) may contain sufficient amounts to allow normal growth and reproduction in the rat, but white corn is valueless as a source.

A very interesting generalization* has been made by Steenbock (14) about the foods which contain this vitamine: they all contain yellow coloring matter. Butter, egg yolks, cod-liver oil are obvious examples. Oleo oil, the part of the beef fat which contains the vitamine, is yellow, the solid beef fat which lacks it is colorless. Of the commercial oleo oils which he has tested, those most highly pigmented are richest in the fat-soluble vitamine. Colored roots such as carrots and sweet potatoes have it, but sugar beets, mangels, dasheens, and Irish potatoes have little or none. Spinach and grass, of course, have yellow associated with their chlorophyl. The carotin isolated by Steenbock did not serve as a substitute for the vitamine, but carotin is a very labile sub-

* See, however, an article by Palmer, which appeared after this paper had gone to press, in *Science*, 50, 502, (Nov. 28), 1919, and which enumerates various foods with yellow color and without A, and with A without yellow color.

stance and may have changed chemically in the process of removal. "It appears reasonably safe, at least as a working hypothesis, to assume that the fat-soluble vitamine is a yellow plant pigment or a closely related compound."

The stability of fat-soluble A is not nearly so great as has been thought. The earlier conclusion that it is stable to heat is due more probably to the fact that such large quantities of the vitamine-containing food were fed that a destruction of part of it would not be noted. Steenbock, Boutwell and Kent (4) have found that after butter fat had been heated for four hours at 100° its growth-promoting properties had largely disappeared, and after one hour at 100° they had distinctly lessened. Drummond, interested particularly in the use of hydrogenated fats as butter and lard substitutes during the fat shortage in England, has investigated the question both for whale oil and butter. The hydrogenation of the whale oil at 250° for four hours completely destroyed the A. Even heating at 100° for an hour had the same effect, or keeping it for eighteen days at 37° spread out exposed to air. The heat was the cause of this loss of efficiency, for shaking with oxygen at room temperature made no change. Steenbock mentions a sample of butter which showed no demonstrable amount of A after it had been kept three weeks unsalted in a poorly iced refrigerator. The probability of some destruction during ordinary cooking processes is thus of interest.

With cabbages (15), too, high temperatures or drying may reduce the efficiency, an hour's heating at 100°-120° having no effect on A, but two hours at 130° destroying it completely.

The fat-soluble vitamine therefore seems to be of even greater importance in the diet of young and old than was formerly realized, and while it is more widely distributed, it is less stable than the first investigations demonstrated, and may be even destroyed in part at temperatures used in cooking.

WATER-SOLUBLE B

For studying the water-soluble vitamine, observations have been continued on the growth of rats and on the onset of polyneuritis in pigeons and chickens. While it is not definitely proved that these two methods deal with one and the same substance, the assumption that such is the case is usually made. A new and most promising method of research has just been developed by Williams (16) in the laboratory of Physiological Chemistry of the University of Chicago. Yeast (16,

17), unlike the higher plants, cannot grow without this vitamine. Therefore if drops of different solutions each containing a single yeast cell are observed microscopically at intervals of a few hours, the growth of the yeast and the number of cells into which it has multiplied will show not only whether the solutions contain the vitamine but the relative quantities present. This method is of course much simpler and quicker than the usual feeding experiment and will probably result in a rapid increase in our knowledge of this vitamine.

Water-soluble B occurs more widely in plant than in animal foods. Milk is by no means rich in it. Osborne and Mendel (18) found it necessary to give their rats at least 16 cc. per day for normal growth. They discuss but do not explain to their satisfaction the much quoted⁴ results of Hopkins who secured remarkable growth on adding as little as 2 cc. of milk to a diet on which his rats were failing. They warn against a diet of white bread and only a little milk, or against feeding infants a top milk, water, sugar mixture. Muscle tissue also is low in this vitamine, but various other animal tissues—heart, kidney, brain, and liver—are satisfactory sources of supply—a distribution similar to that of A (9) though somewhat wider.

An especially satisfactory statement of the occurrence of this vitamine in plants, as so far known, is given by Osborne and Mendel (19) in the *Journal of Biological Chemistry* for this past August. They list a wide variety of plant foods, including among others seeds of cereals and a number of legumes, spinach, cabbage, potatoes, and carrots; and they add to the list, from their own recent experiments, the usual edible portion of the onion, turnip, beet (leaves, stem, and root), and tomato. A goodly number of our common vegetables have thus been tested for B and so far without exception everyone has been found to contain it—a much wider distribution than that of A. The part of the cereal that is rich in it is not the bran as usually supposed, so much as the germ, which is often removed with the bran, e.g., in rice polishings. Commercial wheat bran contains more or less vitamine, according to the amount of the germ associated with it. Of one sample tested by Chick and Hume (20) five and a half times as much had to be used to cure polyneuritic pigeons as was necessary when the germ was used. Our commercial bran is especially thoroughly “skinned” when it comes from large well-equipped modern flour mills (21), and therefore is of little value to correct the deficiency of white flour and bread. Even

⁴ Sherman: Food Products, 1914, p. 79.

the yeast or the milk used in the white bread does not prevent polyneuritis in pigeons (22), though the yeast delays the period of its onset. On the other hand, bread made from real graham flour is adequate. Of course these facts have important bearing upon the kind of flour most desirable from the standpoint of national nutrition. Voegtlin and Lake in a later paper (23) say, "We believe that a product which does not contain any bran but does include the germ would not possess these objectionable features [of causing intestinal disturbances], would at the same time be more nutritious and would reduce greatly the possibility of vitamine deficiency in the modern mixed diet."

Yeast (10) is distinctly the richest known source of the water-soluble vitamine, being four times as efficient as dried spinach which ranks next among a group studied quantitatively. Only half as rich as spinach are whole wheat, soy beans, dried eggs, milk solids. Cabbage, too, is not so satisfactory as spinach. Wheat germ is a valuable source, and so are navy beans and peas. Immature alfalfa clover and timothy show decided advantage over the mature (19). This variation with age may apply to plant foods in general and may mean a real nutritive superiority for young vegetables.

Like fat-soluble A, B is not so stable toward heat as we formerly supposed. McCollum's beans and peas (12), which, although heated for one and a quarter hours in an autoclave, still supplied all the B that the rat needed, were fed in large quantities, often as much as 25 per cent of the diet. When the food supplying B is fed in the smallest amount which will produce growth at all (24), it is found that heating above 100° does cause deterioration, and that the heated food has to be supplied in larger quantities than the raw food. For example, while wheat germ (25) heated 2 hours at 100° loses little or none of its potency, heated 40 minutes at 113° it loses one-half, and heated 2 hours at 118°-124° it may lose up to nine-tenths. These temperatures, of course, point to the safety of the water-soluble vitamine in our ordinary cooking processes, but the danger of its partial or complete destruction in commercial canning or other high pressure cooking. Tinned meat, Chick and Hume report, is devoid of this vitamine, a fact shown not only by their laboratory experiments, but by the repeated development of beriberi in the British army in the Dardanelles and Mesopotamia where the diet for a time consisted only of white bread, tinned meat, and jam.

The stability of B toward alkali seems to be uncertain, though here, too, according to Chick and Hume, the difficulties may be due to feed-

ing such large quantities that a destruction of half or even more during the alkali treatment would not have noticeable effect on the animals. Sullivan and Voegtlin (26) of the United States Public Health Service, who observed several years ago that chickens developed polyneuritis promptly on corn bread made with soda but not on corn bread made with salt, now report polyneuritis in cats and dogs fed meat treated with sodium carbonate till distinctly alkaline and then heated at 120° for three hours; meat heated without the alkali was still a fairly satisfactory food. Rats, however, that were fed the alkali meat lived for at least 110 days—a fact quoted by Osborne and Wakeman (27) to show, with experiments of their own, that the vitamine is more resistant to alkali than generally supposed. Daniels and McClurg (28) feeding generous quantities of navy beans, soy beans, and cabbage, found the diets entirely satisfactory even when cooked for an hour and a half with 5 per cent sodium bicarbonate. McCollum and Simmonds (29) find the *B* in wheat germ destroyed by boiling with 0.28 per cent sodium hydroxide for an hour, but Osborne and Wakeman (27) find it undiminished in yeast digested with tenth normal sodium hydroxide (slightly stronger than McCollum's) for two and a half hours, and then heated for two hours. It may be that previous extraction with ether or other removal of the fat lessens the stability of *B* (16).

What happens in the body as a result of lack of the water-soluble *B* in the diet? McCarrison (30), working in India⁵ has made striking advances in answering this question. He has observed changes during life and loss in weight of organs after death in a large group of pigeons made polyneuritic by a diet of polished rice and later a group fed polished rice, butter fat to supply *A*, and onions for *C*.⁶ There was little difference between the group undergoing *B* starvation and that with general vitamine starvation. The body temperature of the pigeons gradually fell from a normal average of 107°F. to 98° or 99°F., showing a marked slowing up of metabolic processes. Digestive processes were greatly impaired; the starch was largely excreted unchanged. The different organs of the body lost weight strikingly, all except the adrenals which gained—thymus most, then, in order, testicles, spleen, ovary, pancreas, heart, liver, kidneys, stomach, thyroid, brain. The testicles

⁵ A fairly full abstract of the first of these papers is given in *British Medical Journal* 1, 177, (Feb.) 1919, and a briefer reference to it by Le Mer in *Jour. Amer. Med. Assoc.* 73, 1381, (Nov. 1), 1919.

⁶ Observe apparent contradiction here with Osborne and Mendel's work with rats, proving *B* in onions. McCarrison's pigeons became polyneuritic even more promptly in the butter-fat-onion group than on polished rice alone.

lost 93 per cent and the ovaries 69 per cent of the original weight. "Perhaps one of the most remarkable results of a dietary deficient in so-called anti-neuritic vitamine is the constant and very pronounced atrophy of the testicles in males and the similar but less pronounced atrophy of the ovary in females." Other investigators have noted similar results of vitamine starvation. Drummond found that when male rats after as short a time as 14 days on a diet adequate except for *B* were mated with females on an adequate diet no pregnancies resulted.

Such degrees of atrophy in the human subject would result in sterility in males and in amenorrhoea and sterility in females. Human observations are not lacking. McCarrison quotes Vedder as saying that beri-beric women cease to menstruate. "War amenorrhoea" (abnormal cessation of menstruation) is referred to in many recent German periodicals with alarm, attributing it in part at least to defective nutrition. In the Charité-Frauenklinik in Berlin it has been seven times more frequent than before the war.⁷ In Belgium, too, many cases have been observed (31). The experience of Benedict's young men is also striking (32). These difficulties may, of course, be due to general food lack rather than to the specific deficiency in *B*.

Miscellaneous infections were very frequent among McCarrison's pigeons. The whole body was liable to be overcome by a rank growth of bacteria. There may be some similarity between this observation and the great increase in tuberculosis abroad during the war.

The whole morbid process McCarrison believes to be due to nuclear starvation of all tissue cells. "Vitamines are nuclear nourishers."

WATER-SOLUBLE C

The third vitamine now recognized is the antiscorbutic. The earlier conclusion (33) that scurvy is not a deficiency disease, but is due to constipation, has been abandoned. Its adoption probably arose from having a non-controlled milk intake in the diet of the experimental animals and therefore a slight and variable amount of the vitamine.

With this vitamine even more than with the others, human experience as well as laboratory experiments must be considered—both infantile scurvy and adult scurvy. Mild cases of the latter may merely manifest themselves in languor and depression, and severe cases in looseness and final falling out of the teeth, soreness and hemorrhages of the

⁷ (*British Medical Journal*, Dec. 1, 1917, p. 734).

gums, swelling of the joints, great weakness, and finally death. Degenerative tooth changes are particularly characteristic of scurvy (34). They have been described at length in the guinea-pig and are said to be identical in the human subject.

The laboratory animal most used is the guinea pig, for rats, while they thrive better with the antiscorbutic than without it, (35) do not have scurvy. The usual experimental method, carefully worked out, is to note the smallest quantity of experimental food which will prevent the onset of scurvy in the guinea pig when added to a basal "scorbutic diet" such as oats, hay, and autoclaved milk.

Among the chief workers on the antiscorbutic vitamine are Hess in New York, Givens in New Haven and Rochester, and the group, largely women, at the Lister Institute of Preventive Medicine, London,—Harriette Chick, E. Margaret Hume, and others. The results of the latter were made the basis of the recommendations of the Food (War) Committee of the Royal Society on the prevention of scurvy in the army and navy (36). Three recent editorials (37) in the *Journal of the American Medical Association* summarize much of their work as well as that of others.

"The vitamine is present in living vegetable and animal tissues, in largest amounts in fresh fruits and green vegetables, to a less extent in root vegetables and tubers. It is present in small amount in fresh meat and milk, and has not been detected in yeast, fats, cereals, pulses" (38). It is sensitive to high temperature and destroyed "when the living tissue is disorganized by drying and other methods of preservation." Orange juice has been generally recognized as one of the best antiscorbutics; grapes are only about one tenth as satisfactory. Orange peel extract is also of value. Lime juice is poor. The "lime juice" of the eighteenth and early nineteenth century which was responsible for the disappearance of scurvy from the British navy was really lemon juice from the Mediterranean countries. In 1875 certain vessels on polar exploration changed from the old "lime juice" to the true west Indian lime, and scurvy broke out again with great severity. The Lister Institute work has shown that fresh lemon juice has about four times the value of fresh lime juice as an antiscorbutic and that preserved lime juice is almost valueless.

Of the vegetables (39), often more readily available than the fruit and cheaper, raw cabbage is even better than orange juice, and the raw juices of swede (a kind of turnip), beetroot, and carrots are of service.

Cooking (40), however, diminishes or entirely destroys their efficiency except when the vegetables (carrots) are young (Hess). Cabbage (15) cooked for one hour at 60° or twenty minutes at 90° to 100° lost about 70 per cent of its antiscorbutic value and for one hour at 90° more than 90 per cent. Long cooked or canned vegetables are thus of no value as antiscorbutics, a fact born out by human experience for many years. Canned tomatoes (40) seem to be an exception, possibly because of their acid and original richness in the substance. They have been successfully used as a substitute for the more expensive orange juice to prevent scurvy in infants receiving pasteurized milk (41).

Drying, too, lessens the value (42), and, still more, storage after drying. Dried vegetables and herbs have been tried in scurvy in the Army and Navy with no help. Dried tomatoes, however, Givens (43) found, still retain a significant amount of the original high antiscorbutic potency. Drying generally does least harm when done quickly at a low temperature (under diminished pressure) and when the vegetables dried are young. Dried beans, themselves valueless, develop their vitamins on sprouting (44). The Food (War) Committee of the Royal Society recommends (36) that when other antiscorbutics are not available the beans be sprouted and the sprouts used. Their therapeutic value was strikingly shown when King's College Hospital, London, with a number of mild cases of scurvy in soldiers from Serbia, divided its patients into two groups, treating thirty in one ward with 4 ounces of fresh lemon juice daily and twenty-seven in another with 4 ounces of dried haricot beans freshly germinated. Of the patients on the lemon juice 53.4 per cent were cured within four weeks and of those on the germinated beans 70.4 per cent (45).

Potatoes contain the vitamins if not cooked too long, but as the only antiscorbutic the ration must be as much as fourteen ounces per man per day (36). In Glasgow (46), recently, a poor law hospital which had apparently been depending largely on potatoes and had been near the danger line with a normal of three cases of scurvy a year, developed fifty cases when the lack of potatoes in the fall and winter of 1916-17 caused the substitution of the potatoes by rice and bread. In this country, too, Hess (47) speaks of the development of scurvy in numerous institutions in the spring of 1916 after an exceptionally poor potato crop the previous year. In one there were more than twenty deaths, in another more than two hundred diagnosed cases and probably many latent cases which escaped observation.

Milk (48) is of only moderate value as an antiscorbutic and loses most of the value when pasteurized or boiled. Commercial condensed milk (49) is valueless and so, too, is dried milk unless the drying is done very quickly, e.g., for a few seconds at 116° (Hess and Unger) (50). Numerous observations have been made of infantile scurvy developing from use of pasteurized milk and its check by the addition of orange juice. In this connection should be mentioned a very valuable summary, though without the work of the last two years—Morse's "A Résumé of the Literature of Infantile Scurvy during the Past Five Years" in the *Boston Medical and Surgical Journal* (51). An editorial in the *Journal of the American Medical Association* (52) cites numerous recent distressing cases of infantile scurvy abroad, for instance, in Prague in 1917-18 when the much desired "raw" milk was often of doubtful "rawness," oranges had disappeared from the markets since early in the war, and other fruits and even most green vegetables were difficult to obtain and usually very expensive.

Fresh meat has so little antiscorbutic value that the Royal Society (36) states that as much as two to four pounds daily are necessary if it is to be used as the chief preventive agent, and tinned meat is completely valueless. Dutcher, Pierson, and Biester (53) find practically none even in raw beef. Their laboratory experiments do not confirm Stefánsson's remarkable report (54) of his polar experiences. His habit, and that of his party in the north, was to live almost wholly on seal meat and bear meat, using not only the muscle tissue, but liver and various other organs. Often they consumed raw frozen liver. They had no cases of scurvy on this diet. However, three men, who were separated at times from the main party and depended largely on some cached foods which they had found—flour, salt pork, butter, honey, sugar, pilot bread, preserved fruit, pemmican, meat extract, dried fruit, rice, beans, and peas—developed serious scurvy. They were promptly cured when fed meat, largely raw.

One more human scurvy experience (55) illustrates a number of the points so far stated. A number of camps of the South African Native Labour Corps were established in France during the war. The rations consisted of 1 pound frozen or preserved meat, 8 ounces fresh vegetables, and definite quantities of mealy meal (corn) or rice, bread, coffee, sugar, salt, margarine, and tobacco. In country depots where they could pick extra fruit (apples) no scurvy occurred, but in a camp when this was impossible 40 per cent of the natives at one time showed symptoms of scurvy. The

half pound of fresh vegetables probably allowed no margin for the reduction of the antiscorbutic, and yet all foods had been cooked for at least three hours. The chief part of the cure was to give lemon juice, increase the supply of vegetables and limit their cooking to forty-five minutes. In a camp where the scurvy was most severe and lasted longest it was discovered that the instruction to shorten the cooking period had been disobeyed. The condition was soon improved when the cooking was reduced to forty minutes.

In conclusion, it is plain that remarkable as are the advances in the subject, we still have far to go for anything approaching complete knowledge. We need more *quantitative* information as to the distribution of the vitamins in foods and their resistance to all sorts of manipulations—cooking, storing, aging. We lack knowledge of the quantities advisable for human beings of different ages. Finally, and most fundamentally, we yet await the isolation of the substances themselves in purity and the establishment of their chemical composition.

It is very difficult to say what is the importance to the average individual of giving thought to these three vitamins in choosing the diet. Most of us probably use milk or leaf vegetables (McCollum's "protection foods") to get an adequate supply of *A*, enough vegetables of all kinds and whole cereals to get *B* and enough uncooked or little cooked foods for *C*. But the occasional moderately well-to-do individual with dietary idiosyncracies, many persons on very limited incomes, and many in institutions must be close to the danger line. Probably *C* with its marked unstability to heating or drying is the most often low in quantity, and *A* with its limited distribution second. It is more than probable, too, that all sorts of common languors and inefficiencies, and susceptibilities to many miscellaneous infections, are connected with shortage in vitamins.

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RECENT ADVANCES IN OUR KNOWLEDGE OF FOOD SELECTION AND PREPARATION

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While much of the work on food reported in the last few months has already appeared in the *JOURNAL OF HOME ECONOMICS*—much especially of that relating to food preparation—still a great deal of interesting information, sometimes in regard to the cooking of foods, sometimes in regard to food selection, is to be gleaned from studies of nutrition, published in more technical journals. The Science Section of the American Home Economics Association has made an excellent start in the collection and publication of the experimental work going on in the various universities and colleges, thereby filling an evident need and giving an immense impetus to further experimentation.

In the following account, material from all sources is summarized from the standpoint of a special food or food principle, so that the results of various investigations may be related or compared.

Bread. The question of the most economical way to use our wheat supply, emphasized by war conditions, has led to various studies. A bulletin¹ from the United States Department of Agriculture shows the effect of bran in lowering the coefficient of digestibility of an ordinary mixed diet. Bran bread made by the following recipe was fed, each subject eating almost a pound a day. Bran bread: 15 c. bran, 3½ tsp. soda, 1½ c. molasses, 3¼ tsp. salt, 5 tsp. ginger, 1 scant c. lard, 1½ qts. hot water.

Both coarse and fine bran was used. The reduction in the coefficient of digestibility obtained is shown as follows:

	PROTEIN	FAT	CARBOHY- DRATE
	<i>per cent</i>	<i>per cent</i>	<i>per cent</i>
Ordinary mixed diet.....	92	95	97
Diet with coarse bran.....	35.8	93.1	82.8
Diet with fine bran.....	37	88.5	79.8

During the tests the amounts of feces were greater than usual whether the subjects were active, athletic, or sedentary in habit, some finding

¹ Experiments on the Digestibility of Wheat Bran in a Diet Without Wheat Flour. A. B. Holmes, *Bulletin* 751.

the bran decidedly laxative. Little difference was noted between fine and coarse bran so far as its laxative effect was concerned. Osborne and Mendel with coworkers² state that, except in special cases, "little can be gained by including bran and wheat embryo in the flour when this is used under conditions prevailing in this country." By the last part of the statement they mean that the danger of vitamin deficiency due to too restricted a use of highly milled flour is not a menace, with the food habits of our people. They add that "the by-products of milling will be better utilized on the farm than on the table. Moreover, since "about 80 per cent of the wheat kernel can be so improved in nutritive value by adding animal products to the diet that a much smaller amount of the flour will satisfy the protein needs of nutrition, it may well be that the use of the by-products of milling for the production of meat, milk, or eggs will result in a greater economy in the use of flour than if these were used directly for human food."

Meanwhile a report³ from London includes figures for the digestibility of bread made with wheat flour of 80 and of 90 per cent extraction, and concludes that "breads made with 90 per cent flour are not so completely utilized as those made from 80 per cent flour, since when they are used as part of an ordinary mixed diet the coefficient of digestibility of the entire diet was 94.5 per cent, in comparison with 96.4 per cent when breads made with 80 per cent extraction were used. The coefficient of digestibility for the nitrogenous constituents of the diet in the case of the former is 87.3 per cent and the latter 89.4 per cent. The observations indicate that bread made of 90 per cent extraction had no ill effects upon health and will mean a gain in food value for every 100 lbs. of wheat of 13,000 total calories and 1.56 lbs. of protein."

In connection with this report, another from a French source⁴ is of interest. The workers examined microscopically both bread and the feces recovered after feeding bread to mouse, dog, and man, and obtained results that apparently show that the cell walls of the aleurone granules are broken in the bread and that the contents are digested. They suggest that during kneading and fermentation the cell walls are broken

² The Nutritive Value of the Wheat Kernel and its Milling Products. *Jour. Biol. Chem.*, 37, pp. 557-601.

³ Report by the Food (War) Committee of the Royal Society on the Digestibility of Breads. Abstracted in *Exp. Sta. Record*, 40, p. 657.

⁴ Digestion of the Aleurone Cells Incorporated in Bread. Lapique and Liacre, *Compt. Rend. Soc. Biol.* (Paris), 81, pp. 217-222.

open at points weakened by milling, exposing the contents to the action of the digestive juices.

Along an entirely different line are some experiments conducted in the physical laboratory of the University of Washington.⁵ It was determined in three separate tests that bread baked in pans of different materials was much more readily burned in certain materials than in others. The bread baked in granite burned most easily; that in other materials in the order listed: Russian iron, tin, pyrex glass, aluminum (unpolished), aluminum (polished). The oven temperatures were carefully controlled.

Vegetables. Much work on vegetables has been reported, some in regard to food value and the effect of cooking on food value, the rest on problems connected with canning.

The theory that vegetables and fruits must be considered necessary to well-being, on the ground that they balance the acid-forming substances in meat, cereals, and certain other foods, seems to be disproved. Lamb and Evvard,⁶ as a result of work on pigs, think "the apparent failure for experimental diets previously tried may be attributed to other causes not wholly excluded." They find that excess of mineral acid did not cause a significant loss of calcium, nor did it interfere with storage of protein. This work agrees with that reported by McClendon⁷ and others, from which they conclude that there is no foundation for the view that the alkaline reserve of man is endangered by the acid-forming diets, but that such diets as usually eaten by man are deficient in antiscorbutic vitamins.

Osborne and Mendel⁸ have investigated the relative efficiency of foods as antiscorbutics, and conclude that dried spinach is twice as effective as whole wheat, soy beans, dried eggs, or milk solids, but that dried yeast is four times as efficient as the spinach. Delf⁹ finds that the long cooking of cabbage at a low temperature is more destructive of the antiscorbutic vitamin than short cooking at a high temperature, and points out the disadvantage of the use of the fireless cooker for such vegetables as cabbage and green vegetables. He also finds that such vegetables preserve their antiscorbutic property better if steamed

⁵ Bread Baking in Pans of Different Materials. Work done by Frances Heverlo. *Jour. Home Econ.*, 11, p. 352.

⁶ The Acid-Base Balance in Animal Nutrition. *Jour. Biol. Chem.*, 37, pp. 317-342.

⁷ Effect of Diet on the Alkaline Reserve of the Blood. *Jour. Biol. Chem.*, 38, pp. 539-548.

⁸ Vitamines in Green Foods. *Jour. Biol. Chem.*, 37, pp. 187-200.

⁹ The Antiscorbutic Value of Cabbage. *Biochem. Jour.*, 12, pp. 411-447.

rather than boiled, and believes that if they are boiled the addition of either acid or alkali will increase the loss of antiscorbutic properties. The fat-soluble vitamins seem to show greater stability when exposed to heat. Continuing the work, Delf and Skelton¹⁰ find that cabbage dried at 60°C. and stored two or three weeks at ordinary room temperature, has lost 95 per cent of its antiscorbutic property, while at the end of 3 months it has lost nearly all of it. Plunging the cabbage into boiling water before drying distinctly increases the amount of antiscorbutic material retained after drying. Drying and storing for two months also resulted in the loss of 86 per cent of the fat-soluble factor.

Hess and Unger¹¹ declare that in dehydration "too much attention has been paid to the degree of the heating process and too little to the more important factors—the age of the vegetables, their freshness previous to dehydration, and their manner of preservation." In another article¹², entitled the Scurvy of Guinea Pigs, the same authors find that, while 35 grams of old carrots was sufficient to protect a guinea pig from scurvy when used raw, after three quarters of an hour cooking that amount was insufficient, but when the test was repeated with freshly plucked carrots, 35 grams of the cooked carrots was sufficient for protection.

In the same article the authors call attention to the value of canned tomatoes as a substitute for orange juice in infant feeding, though boiling the tomatoes diminished somewhat the antiscorbutic potency.

Helen Masters¹³ concludes that the best way to cook dry legumes, especially on a larger scale, is to soak them for at least four hours in water containing 1 per cent of sodium bicarbonate; then either steam them or boil them for about an hour in water containing 0.25 per cent salt.

Daniels and McClurg¹⁴ warn us that "The fact that our animals made normal growth on rations in which the liquor from the cooked beans was the only source of the water-soluble vitamins emphasized again the undesirability of discarding the water surrounding cooked or canned vegetables. This contains not only much of the inorganic con-

¹⁰ *Biochem. Jour.*, 12, pp. 448-463.

¹¹ Factors Affecting the Antiscorbutic Value of Foods. *Amer. Jour. Diseases Children*, 17, pp. 221-240.

¹² *Jour. Biol. Chem.*, 38, pp. 293-304.

¹³ An Investigation of Methods Employed of Cooking Vegetables with Special Reference to the Losses Incurred. *Biochem. Jour.*, 12, pp. 231-247.

¹⁴ Antineuritic Properties of Foods. *Jour. Biol. Chem.*, 37, pp. 210-213.

stituents of the vegetables, the soluble carbohydrates, and proteins, but obviously much of the water-soluble food accessory as well."

There seems to be a difference of opinion in regard to the possible dangers which may arise from the use of canned foods. Daniels and McClurg continue in the article quoted above, "The note of warning sounded by Chick and Hume to the effect that grave danger may attend the use of large amounts of tinned goods, we believe is unfounded, at least from the standpoint of the antineuritic vitamine contents of the food. From our results as well as those of McCollum and coworkers, it seems improbable that in the commercial canning of foods this vitamine is destroyed to such an extent that too little will be included in the diet when the usual amount of canned food is eaten. Even if there should be a considerable increase in the amount of canned food consumed, we believe there will be still enough of the anti-neuritic vitamine to meet physiological requirements, provided the diet is not materially changed in other respects." Chick and Hume¹⁵ reply to this disagreement with the opinion just quoted and object because the work was not performed quantitatively. They point out that no measure of the amount necessary for growth was made, nor of the exact amount offered to or eaten by the rats. They believe that the amount of anti-neuritic vitamine in the diet was so far in excess of what was necessary that it could well be reduced, halved, or even quartered by cooking and still be sufficient for maintenance. If this were true the results would not prove that the anti-neuritic vitamine was not injured by heating.

Kurk¹⁶ describes the results of examining such vegetables as celery, lettuce, water-cress, green onions, and radishes, collected from stores that were both desirable and undesirable from the sanitary standpoint. He concludes that the general sanitary conditions of the store did not influence the bacterial count.

The JOURNAL OF HOME ECONOMICS has recently published two interesting articles on canning. One reports results from the canning of asparagus¹⁷ and suggests, among other conclusions, the addition of small quantities of vinegar as effective in reducing the time of processing necessary for the preservation of the vegetable.

¹⁵ Note on the Importance of Accurate and Quantitative Measurements in Experimental Work on Nutrition and Accessory Food Factors. *Jour. Biol. Chem.*, 39, p. 201.

¹⁶ The Bacterial Examination of Green Vegetables. *Amer. Jour. Pub. Health*, 8, pp. 660-661.

¹⁷ The Canning of Asparagus. Skinner and Glasgow, *Jour. Home Econ.*, 11, pp. 154-157.

The second article gives data on the Effect of Pack and Depth of Water Bath upon Interior Temperature of Jars in Cold Pack Canning.¹⁸ Conclusions drawn are that the water bath should completely immerse the jars; that loosely packed jars only should be used in canning by usual home methods; that home-canned vegetables should always be heated before use to avoid the danger of poisoning by the toxin of *B. botulinus*, the spores of which are exceedingly resistant to heat.

The last statement refers to an article by Burke¹⁹ in which it is reported that there is a difference in the powers of the spore to resist heat. The more resistant forms are not killed by the open-kettle method of canning, since spores will survive three and a half hours boiling and remain alive in the scum on top of the liquid even longer. Cold pack methods are also not effective in killing the spores; one period, even of five hours heating in boiling water, being insufficient for sterilization. Blanching in hot water does not materially injure the spore. Even fractional sterilization in three successive days is of doubtful value because the exposure to the temperature of the first sterilization period delays the germination of the spores so that they do not develop before the third period of sterilization. While pressure canning is the only method of sterilization that can be considered safe, a pressure of 5, 10 or even 15 pounds for ten minutes will not kill these spores. A comparatively long period must be used. It is suggested that the wisest way is to prevent contamination during the preparation of the material, since it is certain that the organisms are not present under the skin of perfectly sound fruit and vegetables that are not overripe. Bruised and partially spoiled material should never be used for canning. Fruits and vegetables should be thoroughly cleaned before cutting and hands and utensils should be clean, and flies eliminated. Each jar should be examined when opened but not tasted, since the smallest taste may be fatal if the poison is strong. There are three signs of spoilage, any one of which should cause the canned material to be suspected: (1) gas bubbles in jar, tops of jar blown and a squirt of liquid when the top is unscrewed; (2) an odor somewhat resembling rancid cheese; (3) a mushy or disintegrated appearance of the solid part of the contents.

¹⁸ Effect of Pack and Depth of Water Bath upon Interior Temperature of Jars in Cold Pack Canning. Castle, *Jour. Home Econ.*, 11, pp. 246-251.

¹⁹ Effect of Heat on the Spores of *Bacillus Botulinus*. *Jour. Amer. Med. Assoc.*, 72, pp. 88-92.

Since the toxins can be destroyed by five minutes boiling, the material heated in this way just before using may be eaten without danger, even though the spores are not killed, since the latter are not harmful in themselves. Since this organism produces toxins only in material that has been sealed in air-tight containers for a week or more, there is no danger from it when fresh fruit and vegetables are eaten. Meanwhile Dickson²⁰ tells us that botulism is of comparatively frequent occurrence on the Pacific coast.

Milk. In an article on the Milk Industry and the War, North²¹ informs us that "to provide a milk supply that would furnish the United States with the milk required, according to the leading food chemists, would mean an increase of 20,000,000 dairy cows in the United States, or almost double the present number."

Moreover Overman²² tells us that dairy products (milk, skim milk, cottage cheese, and American cheddar cheese) are to be regarded as among the cheapest foods of animal origin, both as to protein and total energy.

Such experiments as those of McCollum, Simmonds and Parsons²³ make clear that we should demand an increase in our milk supply. They report: "In all cases where we have attempted to correct the dietary deficiency of a seed mixture by the addition of leaf only, we have not secured results so good as with milk, especially with such amounts of leaf as would be acceptable in the human diet." Eggs do not furnish sufficient calcium. They also say: "From biological tests we now know that the proteins of pea and navy bean are worth only about half as much for growth in the rat as an equal amount of protein from one of the cereal grains, and that the latter have about one half the value for the conversion into the body proteins which can be shown for the milk protein; and again, "Both meat and eggs are more expensive sources of protection against faulty diet than milk."

There are several studies of the antiscorbutic properties of milk. Chick, Hume, and Skelton²⁴ find "that milk is a food poor in the antiscorbutic accessory factor, since a ration large in comparison with that of other antiscorbutic materials is necessary to afford sufficient

²⁰ Monograph from The Rockefeller Institute of Med. Research, No. 8, 1918.

²¹ *Amer. Jour. Pub. Health*, 9, pp. 258-267.

²² Food Values and Dairy Products. Ill. Sta. Circ. 235.

²³ A Biological Analysis of Pellagra-Producing Diets. *Jour. Biol. Chem.*, 38, pp. 113-147.

²⁴ The Antiscorbutic Value of Cow's Milk. *Biochem. Jour.*, 12, pp. 131-153.

protection from scurvy." They urge that in infant feeding when milk is in any way heated or dried, an additional source of antiscorbutic vitamine be provided. Hart, Steenbock, and Smith²⁶ find that sterilized milk, unsweetened condensed milk and milk powders seem to have largely lost their antiscorbutic properties. In this they are not in agreement with the British experience reported by the United States Public Health Service²⁸ in the use of milk powder in infant feeding.

Hess and Unger²⁷ in discussing the possible deficiency in antiscorbutic vitamine of pasteurized milk, point out that much of the antiscorbutic factor is lost subsequent to heating in the course of handling and aging, and believe that "the length of time to which it is subjected to the injurious environment is in general more important than the intensity of the process."

A suggestion that cows might be specially fed to produce antiscorbutic vitamine is interesting. Also of interest is Sugiura and Benedict's finding that a diet adequate for the production of the young and for growth after the eyes of the young open was nevertheless inadequate for proper milk production. Such a result may call for more careful feeding of the nursing mother.

Fruits. Sugiura and Benedict²⁸ find banana deficient in protein as well as in enough water-soluble accessory to produce either maintenance or growth in albino rats. It is interesting to find so many of the vegetable sources of protein commonly used for meat substitutes declared inadequate, but until we know more of their effectiveness in combinations we are not in a position to be sure of their place in the diet. A method of preparing banana meal is given in the Experiment Station Record²⁹ quoted from the *South African Journal of Industry*. The fruit is to be peeled, sliced thin with a nickel or fruit knife, and spread in wooden trays to dry in the sun. After drying, the material may be crushed in an ordinary mill or mortar and sifted through fine muslin. The meal may be used for cakes or bread by mixing with equal parts of wheat flour, or cooked into mush or used in pudding. Sweet potatoes, yams, or dasheens may all be treated in the same way.

²⁶ Effect of Heat on the Antiscorbutic Properties of Some Milk Products. *Jour. Biol. Chem.*, 38, pp. 305-324.

²⁷ *Bul. Hyg. Lab. U. S. P. H.*, No. 473.

²⁸ Factors Affecting the Antiscorbutic Value of Foods. *Amer. Jour. Diseases Children*, 17, pp. 221-240.

²⁹ Nutritive Value of Banana. *Jour. Biol. Chem.*, 36, pp. 171-189.

³⁰ Vol. 41, pp. 64 and 65.

Eggs. In an article²⁰ from the laboratory of the University of Missouri, on The Use of Desiccated Eggs, the conclusions are drawn that satisfactory desiccated egg products may now be obtained and that these even at their present price can effect a considerable saving throughout the greater part of the year, but that there is not yet sufficient demand to make them easy to obtain in retail amounts. The bacterial content is not such as to make them detrimental to health when used in cooked food. They give highly satisfactory results in practically all typical foods in which eggs are used, but can not be used in mayonnaise dressing.

The suggestion²¹ that horse serum be used as an inexpensive and satisfactory substitute for white of egg in cooking is not likely to meet with much favor in this country.

Sugars and syrups. In an article on Factors Influencing the Amount of Invert Sugar in Fondant²² Daniels and Cook draw some very interesting conclusions. They find that in regions in which the water used in cooking is even moderately hard, the alkalinity may be sufficient to neutralize the cream of tartar called for in an ordinary recipe, and believe a local recipe should be formulated for such use. They suggest, however, that it is easier to obtain constant results in making fondant if glucose is added directly to the sucrose instead of depending on the inversion of part of the latter, for they find that when acid is present the length of time of cooking influences the amount of invert sugar obtained.

In an article on the Acidity of Various Syrups Used in Cookery, Daniels and Heisig²³ determined the amount of soda to be used with various syrups and honey. This article calls our attention to the need of standardization of such recipes..

The *American Food Journal*²⁴ has an article by Dunnigan from Iowa State College on sugar substitutes in jelly making, and an article by Rucke²⁵ of the University of Illinois on the manufacture of Invert Sugar and Use of Substitutes, both of which may prove useful during

²⁰ The Use of Desiccated Eggs. Lhamon, *Jour. Home Econ.*, 11, pp. 108-115.

²¹ Utilization of Horse Serum in Human Nutrition. *Compt. Rend. Acad. Agr. France*, No. 29, pp. 807-810.

²² *Jour. Home Econ.*, 11, pp. 65-70.

²³ *Jour. Home Econ.*, 11, pp. 195-200.

²⁴ Vol. 13, pp. 247-248.

²⁵ *Ibid*, pp. 671 and 672.

AN EXPERIMENT IN SOCIALIZING HOME ECONOMICS EDUCATION

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How can home economics students be brought into closer touch with real life problems? How can they be made to realize more fully the individual and social importance of home economics education? How can they be made to see more definitely the close relationship between organized social work and home economics work? How can they be influenced to think of home economics as a social science and one with social responsibilities?

An attempt to answer these questions was made during the month of June by the Committee on Home Economics of the New York Charity Organization Society through its Sub-committee on Student Plans of which Miss Cora M. Winchell is Chairman. A special field work course was offered to properly qualified women with home economics training, and over forty applications were received although the dates of the course (June 9 to July 5) interfered with the attendance of students or staff members from the many schools and colleges whose academic year ends late in June. The size of the group was originally limited to twenty-five, but thirty applicants were finally accepted and twenty-six of them completed the course. Only five of these were without professional experience, and the majority of the group had had a considerable amount either as teachers, extension workers, or dietitians.

On Wednesday of each week the group heard talks by social workers and visited social agencies. On Saturday there was a round table discussion. On Monday, Tuesday, Thursday, and Friday the students were divided into groups of two or three, and each group was assigned to a special field work supervisor who gave each student individual training in the methods and principles of social case work and a considerable amount of experience in case work practice. The field work supervisors were district secretaries in the New York Charity Organization Society and the Brooklyn Bureau of Charities, and the students were given full responsibility as members of the staff of these organizations during their training period and their work was expected to measure up to the standards set for good social case work. The

particular tasks varied according to the capability of the student and the particular needs of the families under care, but usually the student was assigned to work with a small group of families presenting various types of social problems, and was guided in making different kinds of investigations and developing various constructive plans of treatment.

A surprising thing to several of the students was the fact that not all people tell "the truth and nothing but the truth;" and that there is real need for the verification of essential kinds of information. They also learned the importance of searching for underlying causes rather than treating superficial difficulties, and came to realize the difficulty of securing good results in educational work in home economics when the main cause for low living standards is the payment of inadequate wages or the lack of community responsibility for providing the essentials for wholesome living. In addition they learned to appreciate the value of the methods and technique which have been gradually developed in social work, and the importance of utilizing certain of them in any social work in home economics.

They also came to realize very forcibly how many families are not reached by the domestic science work in the upper grades of the elementary schools and how much need there is for developing more opportunities for people to receive instruction in simple homemaking practices, especially in foreign districts where people are unfamiliar with desirable housekeeping methods under American living conditions.

Of greatest value, perhaps, especially in connection with home economics work, was the realization which came to practically all of the students of the importance of thinking of the influence of various social and economic problems, and of the various forms of organized social work, in the terms of their effect on individual family life. Why girls go wrong, why men desert their families, why vocational training is necessary, why certain racial groups do not mix easily here in America, the evils of unemployment, the long-standing effects of illness, what happens when the cost of living goes up and the wage remains stationary,—these and many other questions became of absorbing interest to various members of the group when viewed from the standpoint of what was happening in a family in which they were vitally interested. The efficiency or the deficiency in the work of various types of social agencies became matters of considerable importance in a definite and personal way when considered in connection with the development of plans for the lessening of the difficulties encountered in a particular family.

Each student kept a diary record of all work done, and the academic result for the course which was given by Teachers College, Columbia University, was based on this record and the grades recommended to the Committee on Instruction by the Committee in charge of the work.

The course was too short to be of value as vocational training for social work positions, and this was not the purpose for which it was established. It is felt, however, that it proved itself of distinct value as a means of bringing students into close contact with actual home problems as seen by the social worker, and that it also brought them into close contact with the many and varied efforts required for the solution of these problems. It also seems to have had the very great value of strengthening the belief of this group of home economics women in the social value of the subject in which they are chiefly interested.

THE TRAINING OF CHILDREN AS A PART OF LABORATORY WORK IN HOME MANAGEMENT

ELIZABETH VERMILYE

The University of Minnesota

Under the provisions of the Smith-Hughes act, universities engaged in training teachers of the vocation of homemaking are required to provide for their students "vocational contact." That is, if these students are ultimately to teach the vocation of homemaking, it is obviously necessary that they must themselves have experience with that vocation. The value of home experience has been well demonstrated, but it is likewise well known that in too many cases girls in their mothers' homes are never given full responsibility, so that they have not had complete contact with their vocation.

Obviously the college girl cannot be provided with the identical experience of the average homemaker. She has neither the situation nor the time. The thing which the colleges and universities can do is to put her into contact, not with the actual situation of the homemaker responsible for the welfare of her family, but with as many home problems as possible, and with those problems grouped together in such a fashion as to provide the nearest semblance to the task of the homemaker.

At the present time there are, to our knowledge, eighteen colleges and universities in the country offering laboratory work in home management. Up to this time, however, the most important work of the household, the work around which the average household centers, has been omitted—the care and training of children. The time has now come when it seems feasible to make an application in the home management house of the subject matter gained in child welfare courses.

The following is an explanation of the project undertaken in the spring and summer quarters of 1918–19 at the University of Minnesota.

The University of Minnesota conducts two home management houses in connection with its Division of Home Economics. Under the project for adding the training of children to the course, a child was taken into each house, the entire care being placed in the hands of the students, under the supervision of the instructor.

THE PROBLEM

The Object. The work was undertaken (1) to show that laboratory work in the care of children can be fitted into a college program; (2) to demonstrate methods of child care, both physical and mental, which are known to result in the well-being and development of the child; and (3) to work out some management problems involved in the care of children.

The babies. The children were two boys, Russell, aged thirteen months, and Earl, aged twenty-one months. Both had been in baby homes since birth. They were taken because they were two for whom the arrangements could be made easily. The coöperation of the home authorities was easily secured.

Coöperation of other sections and departments. Although the problem was mainly one of management, it was recognized from the beginning that the project was undertaken by the Division as a whole. Thus, the clothing section coöperated in making clothing and a clothing budget; the instructor in home nursing gave the initial demonstrations of the best methods of physical care. The Division of Pediatrics in the College of Medicine coöperated by giving the babies an examination in clinic.

Adjustment to the college program. Each girl, in rotation, carried the work of “baby manager” for one week. Toward the close of the course each girl had another period with the same responsibility. The “baby manager” assumed the entire responsibility for the care of the child

during her period. She herself did the actual work of caring for him between the hours of 6.00 to 8.00 a.m. and from 4.30 to 6.00 p.m. During the day the child was in the care of three or four other students during the time they were not in class, the manager making the program for this care, giving instructions regarding food and other matters needing attention. The baby manager did the baby's laundry work.

One difficulty in the program should be noted. There were 3 periods per week when all the students in both groups were in the same class; 3 other periods when all the students and one instructor were in the same class. In the first case the instructors took care of the children; in the latter, assistance from students not in the working group was used.

METHODS OF CARE EMPLOYED

Daily program

Russell		Earl	
Waken.....	6:30	Waken.....	6:00
Breakfast.....	6:30— 7:30	Breakfast.....	6:00— 6:00
Quiet play in crib.....	7:30— 8:30	Quiet play in crib...	6:30— 7:30
Bath.....	8:30— 8:50	Bath.....	7:30— 8:00
Play.....	8:50— 9:30	Play, ride.....	8:00— 11:00
Sleep.....	9:30— 12:00	Dinner.....	11:00— 12:00
Dinner.....	12:00— 1:00	Sleep.....	12:00— 3:00
Play, ride.....	1:00— 5:00	Play, ride.....	3:00— 5:00
Supper.....	5:00— 6:00	Supper.....	5:00— 6:00
Bed.....	6:00	Bed.....	6:00

Food. Russell: age thirteen months; weight 15 pounds, 9 ounces at beginning. Special dietary needs: diet to overcome rickets and eczema; liberal in quantity to correct underweight. The following shows the kinds given daily, except as noted:

Milk (skimmed), one pint.

Toast, crackers, both white and graham.

Cereal thoroughly cooked but not strained.

Fruit juice and pulp, two kinds each day, especially orange juice and prune pulp.

Potatoes, mashed or baked, served without butter.

Vegetables other than potatoes, almost any kind, especially spinach, carrots, tomatoes.

Meat in the form of scraped beef, veal, or chicken, two or three times per week or

Eggs 2 or 3 times per week or

Custards 2 or 3 times per week.

Cod liver oil, 3 tsp. per day.

Earl: age twenty-one months; weight 19 pounds, 2 ounces at beginning. Special dietary needs: diet to overcome anaemia; liberal in quantity to correct underweight. The diet for Earl was practically the same as for Russell with a few exceptions. Not having the complication of eczema he was not so closely restricted as to fat, and a little butter was used as seasoning; emphasis was placed on iron-containing varieties of fruits and vegetables; eggs were allowed two or three times a week in addition to the allowance of meat, and simple desserts were allowed daily, such as blanc mange, fruit whip, custards, gelatine.

Play. Russell, at the age of thirteen months was very inactive and apparently took notice of nothing. He was content to be in his bed and made no effort to creep or reach for things. Gradually he came to take more interest as illustrated by his desire to find articles concealed from him, to imitate expressions and sounds, and to recognize people whom he knew. Progress was shown equally in his ability to creep and attempt to take steps. The latter was accomplished by the use of his bed and pen.

Earl, at the age of twenty-one months, could walk only a few steps at a time, and did not know how to laugh or play; his muscular coördinations generally were poorly developed. A "kiddie car" was the means of teaching him to walk easily because he was so fond of pushing it about. Climbing on stairways and furniture, and turning somersaults resulted in amazing development. After being helped to walk up and down stairs a half-dozen times, he chose to stop sitting down and propelling himself with his hands and to walk "right side up" by the banisters. Development in using his hands came more slowly. Building blocks helped; baskets or metal bowls into which he could put small, light objects, such as soap boxes and talcum cans, afforded much amusement—much more than more costly special toys. His development and pleasure came from being allowed to work with things.

Not the least important part of his progress came from being loved and played with and taught the baby games. It was necessary to see that this was not overdone, but this took care of itself as the instructor and the girls became acquainted with their problem.

Discipline. This presented no particular problem in the case of Russell, who was in the creeping stage. Of a naturally happy disposition, he was pleased with any attention he received and made few protests.

With the older child who had a more nervous disposition, and who was climbing about, discipline was one of the largest problems. The principle was adopted of giving him the greatest amount of freedom compatible with reasonable care of property and convenience for the grown people. Students and instructor together worked out the specific applications, as, for instance: Earl may play with wastebaskets but must be taught to replace anything he pulls out; he may not handle books and papers from any bookshelves; he may push about the wicker furniture, but may not handle piano nor piano stool. Whenever possible, corrections were made by diverting his attention; sometimes he had to be removed bodily from the scene of trouble.

Success in the problems of discipline was demonstrated by a considerable improvement in his nervous condition effected in the first two weeks. Uniformity in granting privileges and imposing restrictions, and the prevention of over-stimulation were probably the two most important factors.

MANAGEMENT PROBLEMS

Task management, or the adjustment of work to take the least time and energy, perhaps came first. Factors in accomplishing this were:

Equipment. Outside the simplest pieces, such as crib and high chair, no special equipment was used. Working space in the bathroom was improvised with an old drawing board and pads, fitted over the end of the tub; a paper lined grape basket held toilet articles. All of this was of great interest when being arranged.

Food planning. Much of the babies' food was served from the amounts prepared for the family use. Only a few of the out-of-season vegetables were prepared separately.

Supervision of play. Russell could be left to play alone a considerable part of the time and seemed better for it. Attempts at leaving Earl entirely alone at his play resulted in disastrous bumps, or in damaged furniture. The method developed was to give him the toys which would keep him busiest and let him play alone while other work proceeded. All kinds of housework could be done but at a much slower rate than normally; sewing and mending could be done at a rate nearly normal, also the more mechanical kinds of desk work, such as copying and checking. Really concentrated study was impossible.

Time. Any figures given must be taken as approximate. In recording time, an attempt was made to separate the time when nothing could be done besides caring for the baby, and that in which the care of the baby overlapped other work.

Time given especially to the care of the babies was subdivided approximately as follows, and was about the same for both babies:

1. About three hours per day to giving meals. It must be remembered that the children were undernourished to begin with and in strange hands, and hence were somewhat capricious. Moreover, the babies' meal hours did not coincide with the family schedule as in many homes, and this meant an increase in time.

2. About one half hour per day to bath.

3. An average of about one hour to laundry.

4. About one half hour to tidying rooms, bathroom, airing beds.

Total: five hours of actual care of baby.

Aside from the above the babies spent not over four waking hours, and these at play. However, even during their sleep, someone had to assume responsibility. Including this, there was an average of about five hours work per day expended by the baby manager, and an average of one and one-third hours per day by the assistant housekeepers, though usually put in in groups of three or four hours twice a week.

It must be noted that these hours included many other activities of the students. From the manager's time should be deducted the time spent in dressing, eating breakfast and dinner, cleaning her room; also time for her personal relaxation in the evening, even though not completely free from responsibility. On the other hand the draft upon an individual which comes from assuming responsibility cannot be computed in terms of hours. It is, however, an inevitable accompaniment of homemaking.

Cost. All the large pieces of equipment were donated or loaned, including cribs, carriages, high chairs, toilet chair; also some clothing. For this reason the actual figures recorded are not significant of the actual cost of initiating such a piece of work. The figures for food, also, were extremely difficult to separate accurately, since much was served from the amounts prepared for the family. A weighed dietary study was made over a one-week period. Calculations based upon this, with allowances for waste indicated \$25 as the approximate cost per quarter, twelve weeks for each child.

CONCLUSIONS

After one quarter and one summer session of child training as a part of home management work, with the opinion of four groups of students and four instructors, the following conclusions are unanimous:

1. The work is of irreplaceable value because of the joy it brings to the house and the home spirit it creates; because of the increased range of vocational contact; and because it makes the house problems more normal in their relationships.

2. The work is of decided benefit to both students and children.¹ The benefit to the babies is shown by a few facts taken from their health records:

Russell—Gain in weight in seventeen weeks, 4 pounds, 12 ounces; eczema controlled; activity greatly increased, gain in height $2\frac{3}{4}$ inches.

Earl—Gain in weight in seventeen weeks, 3 pounds, 6 ounces; activity greatly increased; muscular coördination improved; nervous irritability greatly lessened; mental development advanced.

3. The most desirable age for the babies is open to discussion. Children of four to six months of age to start with would give a wider range of problems during the year. Undoubtedly babies who could remain in the crib a large share of the time would be easier to care for under house conditions, if in good health. On the other hand, the experience with the active, developing small boy or girl presents a field all its own.

¹ The examining physician at the end of seventeen weeks summed up his opinion of the results thus: "The improvement in the condition of these children speaks highly for your coöperative motherhood."

FOR THE HOMEMAKER

COST OF LIVING¹

FLORENCE NESBITT

Institute Instructor in Dietetics, American Red Cross

It is practically impossible to avoid the subject of family income when talking about child welfare, because it lies so close to the very root of all work for the interests of the child. If the income of the father is not enough to cover the necessities of life, does not permit a minimum normal standard of living, then either mother and children are driven into industry, and home life is neglected; or else the standard is lowered, and we have bad housing, under-nourishment, and all the other hideous results of poverty.

It is a difficult thing to give any absolutely definite figures for an income below which we do not dare see families fall. These last few years, since the rise in cost of living has focused so much attention upon the subject, have, however, given us increasing confidence that we are able to make a fairly accurate estimate of this sort. When approaching the problem from different points of view, we find that our results when trying to estimate the necessary cost of a normal standard of living closely approximate each other. For example, the estimate which the Bureau of Labor based on a large volume of statistics as to what people really do with their income, differs very little from the estimates of those of us who start from exactly the opposite end, trying to define the elements of a normal standard, and then attempting to discover the cost of maintaining such a standard.

In Chicago, those who have been working on the problem recently figure that it costs approximately \$1500 a year to buy the essentials for maintaining the average family of five—father, mother and three children—at what we might consider a normal standard. That means, of course, a minimum wage of about \$5 a day for the working man.

¹ Reprinted from *Standards of Child Welfare*. A report of the Children's Bureau Conferences, May and June, 1919.

Last fall I made an estimate of the minimum cost of living for a self-supporting family in Cleveland. The Bureau of Labor had at that time just completed their estimate which placed the cost of living for ship builders' families at something under \$1500 per year. My estimate was almost the same. I asked two managers of Cleveland factories how that compared with the wages of their men. Each one said that not more than 25 per cent of their people earned as much as that.

We are so in the habit of thinking about the rather abnormally high wages some people have received since the beginning of the war, that we jump to the conclusion that the whole body of wage earners are earning a great deal more than they are. When it really comes down to figures, we find that there are large groups of workers who have been affected very little by these raises. In the isolated communities where the war industries have not penetrated, there is no increase in wages that even begins to cope with the increased cost of living. If we could raise wages to meet the increase in the cost of living we would be on solid ground, but there has never been a time when the ordinary wage of untrained labor covered adequate living. In 1914, when the unskilled wage was about \$2 a day, it took at least \$75 a month to cover the every-day requirements of decent living.

So there seem only three ways out of the difficulty: The cost of living must come down; or there must be a nationalization of financial responsibility which will relieve the individual family of a portion of the cost which they must now bear; or wages must rise to cover the cost of living; so that every child may have his adequate opportunity for normal development.

TO COOK PRUNES WITHOUT HEAT OR SUGAR

Wash prunes well; throw the water away. Pour over them boiling water; let stand for three minutes. Pour this water off. Barely cover with cold water; let stand for twenty-four hours. The result will be a deliciously cooked prune with rich juice.

A CARD SYSTEM OF HOUSEHOLD ACCOUNTING

ELLA KAISER CARRUTH

For many years woman has been exhorted from the platform and from the printed page to put her housekeeping on as businesslike a basis as her husband puts his affairs. Now what is more businesslike than a card index, unless it be a check book? Why not, then, at least begin to put up a business-like appearance by using them both? And using them as a part of a "system of household accounting" certainly has the true ring of administrative efficiency!

Two cards and a check book will do as a starter for the system, although a third, fourth, or *n*th card may be added as the zeal for detail increases. And after all of these are filled, may come the most absorbing of all—the "human interest" card. Consideration of that, the best, shall be saved till last, as the children say.

On the check book stubs are, of course, the records of any large expenditures. There too are found such items as "Cash. . . . \$10.00."

With this latter entry the first of the cards is also concerned. On this card, with day-book rulings (see fig. 1) is recorded every cent of cash which goes into and comes out of the household purse. In the wide column to the right of the date are entered the sources of supply, followed in each case, in the first cash columns, by the amount received. On other lines in this same wide column are noted the names of articles for which cash (never checks) has been paid, the amount following in the last two cash columns. There it is in a nutshell; what has come in and what has gone out.

The "Balances" with amounts in brackets are merely partial balances. They are figured out every few days and compared with the "money in thy purse." This is an ounce of prevention which obviates serious discrepancies on the day of final reckoning at the end of the month. When that day comes, the difference between the sum of the money spent and that received should equal the amount of cash on hand.

Assuming that it does, and that recourse to a large "sundries" item has been unnecessary, the household administrator may proceed to the filling out of a general summary card. Details for the summary are culled from the check stubs and from the cash account card under various headings. Those suggested in figure 2 are of fairly general application. In considering the items from the check book, the checks drawn to "cash" should be ignored as they are accounted for on the cash card.

If the housekeeper is interested to have any sub-division on the general summary card itemized in more detail she has but to make use of one more card. Figure 3 illustrates how the details of the \$50.63 spent for food in January may be shown. Various sub-headings for any of the other items will readily suggest themselves.

FIG. 1. CASH ACCOUNT CARD
January 1-31, 1919

1	Cash on hand....	5	00		20	Club dues.....			1	00
2	Laundry.....			90	21	Slippers.....			2	00
	Toys.....			40		Lettuce.....				15
	Car fare.....			35	25	Theatre.....			4	00
3	Cream.....			40		Cash.....	10	00		
7	Dividend.....	10	00		27	Red Cross.....			2	00
	Stamps.....			1	30	Shoes.....			7	00
	Dishes.....			4		Balance.....	(1	00)		
19	Steak.....			80		Buttons.....				20
	Balance.....	(7	15)			Total.....	25	00	24	20
						Forward.....		80		

FIG. 2. SUMMARY OF HOUSEHOLD EXPENSES

1919

MONTH	FOOD	HOUSE- HOLD	PERSONAL*	DRESS	ALLOWANCE		TOTAL
					J	M	
January.....	50.63	25.10	15.00	10.75	20.00	20.00	141.48
February.....							

FIG. 3. FOOD CARD

1919

MONTH	MEAT	GROCERIES	MILK	ICE	TOTAL	NUMBER MEALS SERVED
January.....	6.70	37.11	6.82		50.63	364
February.....						

And now for the human interest feature. Humanly speaking, few things are of more universal interest than meals. Next to them perhaps ranks social intercourse. And the meals eaten by the family and the social intercourse enjoyed by them individually or collectively are recorded on this fourth card.

One side is ruled to form a calendar for the current month. In each day's space three figures jotted down thus $\frac{3}{4}$ indicate exactly how many breakfasts, lunches, and dinners were served on that day. Any variation from the ordinary number is explained briefly on the back of the card. If, for instance, there were five dinners served on a given day instead of the usual four, a glance at the "social register" side of the card reveals the fact that Uncle Sam dined with the family on that day. A zero in another space is explained by the statement that the entire family dined out on that evening. This card should be very popular with those who maintain that one of the chief values of a cash account is that it forms a diary of daily events.

But it also serves, most prosaically, as a basis for computing the amount spent per person per meal. If the total number of meals served is transferred to the Food Card this computation is easily made. And, as every housekeeper knows, she must, in supplying her table, keep within the limits set by the expert dietetic statisticians, possibly modified by her own special condition and experience. Otherwise she is not a really business like administrator—not the kind her husband is at the office.

MINIMUM WAGE

The Massachusetts Minimum Wage Commission, in ordering a minimum wage of \$12.50 per week for experienced women workers in the candy trade, publish the following weekly budget as necessary for a self-supporting woman:

Board and lodging.....	\$7.00
Clothing.....	2.25
Laundry.....	.50
Carfares.....	.76
Doctor and dentist.....	.30
Church.....	.11
Newspapers and magazines.....	.18
Vacation.....	.40
Recreation.....	.30
Savings and insurance.....	.30
Self-improvement.....	.15
Incidentals.....	.25
	<hr/>
	\$12.50

The Commission fixed a minimum wage of \$11 per week for experienced workers in the canning industry.—*Industrial News Survey*.

SHOES

The Health Division of the Bureau of Social Education of the Y. W. C. A. has begun a campaign of education in the matter of shoes. It not only hopes to prove to women and girls that the shoes ordinarily worn are not conducive to good posture, and consequently to good health, but it has enlisted the coöperation of shoe manufacturers in placing upon the market "approved" shoes. A list of the firms carrying "approved" shoes will be sent to each of the 1039 local associations in the United States.

This is particularly welcome news to the many women who have not needed to be convinced of the need of proper shoes, but who have found it exceedingly difficult to obtain comfortable ones, especially if any regard were paid to looks.

Can we criticize China?¹

A leaflet issued by the United States Public Health Service called the "Road to Health" emphasizes the need of properly fitting shoes, and gives the following directions for the care of the feet:

Exercise the toe muscles by working the toes up and down over the edge of a thick board 30 times daily. Stand with feet parallel and somewhat apart with great toes firmly gripping the ground. Without bending the knees or moving the feet rotate the thighs outward repeatedly. This is chiefly done by strong contraction of the great muscles of the back of the thigh and seat. Improve your general health; take general exercise to strengthen your body. Bathe the feet daily. See a surgeon if these simple measures are not sufficient. The arches found in the shops will not correct flatfoot. They merely act as crutches. Hammertoe, bunion, and many other defects can be corrected by a surgeon. Painful feet may be due to infection in tooth sockets or tonsils; search for such conditions should be made. Mere flatness of the foot without pain or other deformity may be of no importance.

¹ Used by courtesy of the *War Work Bulletin*.

NOT BREAD ALONE

Menu cards have a certain fascination for most persons. They are usually full of possibilities, at least this is so of those which ordinarily come to the attention of the eating public. When a menu comes to light which is so meager as to be devoid even of possibilities, it is such a rarity that it deserves a place unto itself in the light of publicity.

One Polish widow, with four children in a family which has recently come to the Federated Charities for assistance, was asked to keep a menu of the meals which she served her family for one week. At the end of the week she handed to our worker the menu, which is copied exactly below.

Meals—3-17-'19 to 3-23-'19

Monday morning	Bread with butter	Thursday morning	Bread with lard
dinner	The same	for dinner	the same
Supper	Potatoes	supper	Tomatoe soup
Tuesday morning	Ballony	Friday morning	Cake
dinner	Cake	Diner	Bread with butter
Supper	Potatoes		Sopper rice
Wensday morning	Downuts	Saturday morning	Bread Just
Dinner	Harings	Dinner	sausage
Sopper	Macaroni	Sopper	potatoes
	Sunday sausage		
	Dinner tomatoe soup		
	Sopper the same		

Immediately upon receipt of this information our worker requested the dietitian of the Maryland State College of Agriculture, Extension Service, who is working in conjunction with one of our district offices, to instruct this mother in the art of buying and preparing food. The Polish mother was entered in a cooking class and was taught to prepare simple and nourishing food for her family. She was given a menu to substitute for her old one, and on the list of foods which she served during the week of March 24th, 1919, were introduced oatmeal, rice, biscuits, cocoa, bean soup, prunes, lima beans and cabbage, none of which she had known how to prepare before. In the short space of one week she had been taught to prepare these foods, and, more than that, she had learned that, while there was such an organization as the Federated Charities, and such assistance to be had as she had secured from the trained dietitian, there was no further need for serving meals consisting of "bread just."—*The Helping Hand*, The Federated Charities of Baltimore.

EFFECT OF BEATING CAKE MADE WITH DIFFERENT BAKING POWDERS

EVELYN G. HALLIDAY

The University of Chicago

From the results of their work with cakes Miller and Allen¹ concluded that the optimum time of beating was from one to two minutes and for a given recipe was dependent upon the vigor with which the beating was done. When beating was prolonged beyond the optimum time, cakes were heavy and inclined to tunnels. These results were ascribed to loss of carbon dioxide. For their work one type of phosphate baking powder was used throughout.

Some recent experiments carried out in this laboratory have shown that the optimum time of beating varies also with the type of baking powder used. For these experiments one-third of the following recipe was used: fat $\frac{1}{4}$ c., sugar $\frac{3}{4}$ c., egg 1, milk $\frac{1}{2}$ c., flour, $1\frac{1}{4}$ c., baking powder 3 t. of tartrate or phosphate or alum powder.

All ingredients were weighed and combined according to the conventional method by creaming the butter and sugar, adding beaten egg, then liquid and flour with baking powder alternately. Weighed amounts of batter were baked in muffin tins of the same size and at the same temperature. One series of cakes was baked immediately, others after beating one, two, three, five, and ten minutes respectively.

With all powders it was found that cakes beaten one minute had a better texture than those which were unbeaten and all were quite similar in appearance except those made with alum powder. These were a little coarser in texture than the others. When phosphate cakes were beaten longer than one minute, tartrate longer than two, heaviness began. With continued beating heaviness was more pronounced and tunnels appeared. Quite different were the results with alum powders. With these the cakes beaten ten minutes were best, and were as fine in texture as the best of the tartrate cakes.

If heaviness and tunnels are largely due to loss of carbon dioxide, the behavior of alum powders is easily explained by the fact that such powders do not act appreciably in the cold and consequently lose but little of their carbon dioxide in the process of manipulation.

¹ Miller and Allen: *Jour. Home Econ.*, 10 (1918), no. 12, p. 542.

THE END OF AN 80-HOUR DAY

A man who stayed home with the children for half a day while his wife did her Christmas shopping submits the following statistics:

Opened door for children.....	108 times
Closed it after them.....	108 times
Tied children's shoes.....	16 times
Number of stories read to them.....	21
Stopped children playing piano.....	19 times
Smoke rings blown to amuse them.....	498
Arbitrated children's quarrel.....	77 times
Put doll carriage out.....	28 times
Brought doll carriage in.....	28 times
Mended kiddie car.....	5 times
Cautioned children about crossing street.....	66 times
Children crossed street.....	66 times
Peddlers rang door bell.....	7 times
Toy balloons bought for children.....	6 times
Average life of balloon.....	3 min.
Dried children's tears.....	14 times
Assisted children to blow noses.....	14 times
Telephone calls answered.....	8
Percentage of wrong phone numbers.....	100 percent
Crackers issued to children.....	37
Slices of bread and butter served.....	12
Drinks of water served.....	9
Refused to buy candy.....	87 times
Questions about Santa Claus dodged.....	1,051

The statistician is now advertising for two nurse girls and a governess.
—*Selected.*

HIGH COST OF LIVING

Among the angels—it's a shame
To tell it—prices are so dear,
They use the blown-out candle flame
To mend the ragged stars, this year!

—*Mary Carolyn Davies in A Little Freckled Person—Houghton, Mifflin Co.*

EDITORIAL

Lake Placid Conference on Group Living. Those who in past years have experienced the hospitality of the Lake Placid Club will be doubly glad to know of the proposal for another conference outlined in the following letter from Mrs. Dewey.

In response to several letters asking if the spirit of the Lake Placid Conference could not be revived and an "old time rally" be held there again, an informal meeting was called at the Riversea branch of the Club, Old Saybrook, Conn., on October 24-26, to discuss plans and possibilities. Since as a result of war conditions and labor difficulties, the country is facing a transition period with a decided trend from home to institution life, there seems urgent need to study specially problems connected with group living. One definite plan that has been suggested is the organization of a Bureau of research for institutional economics, on similar lines to the Harvard Bureau of Business Research, connected with the School of Business Administration.

It was decided to hold a conference at the Club about the middle of May and to invite several allied organizations to cooperate. It was suggested that a full day be offered to both the Institutional Economics and the American Dietetic Association when their Chairmen should preside and be responsible for their entire program; or, if they prefer, that each should select definite subjects for which one or more sessions be reserved, under their charge.

With various sectional and administrative groups, working in different parts of the country and holding meetings at stated intervals, the chief purpose of such a general meeting would be to unify results, broaden the scope of future research and avoid duplication of work.

Miss Emma H. Gunther of Teachers College was asked to act as Chairman of the general program committee, with whom allied organizations might confer in selecting definite topics. Open discussion after each subject presented would give opportunity for exchange of varied experiences on a wide range of problems.

The usual plan of the Lake Placid conference has been to hold morning and evening sessions, reserving afternoons for attractive excursions in the neighborhood. Regular meetings might cover four full days, or possibly Monday evening to Saturday morning inclusive. Those who attend could remain over two Sundays, gaining opportunity for informal interchange of ideas and

broadening acquaintance with workers who are widely scattered in different states. Because of their interest in the subject, the Club trustees offer conference members half price on both rooms and meals.

While all questions of community service will be of interest, suggestions for the program are especially asked on subjects which concentrate on present day progress in efficient living.

ANNIE DEWEY.

COMMENT AND DISCUSSION

The Committee's Definition of Home Economics. The necessity for fixing the meaning of terms in any science or argument is generally recognized for the purpose of outlining its field and of preparing the way for further study and discussion. Out of this need arises the definition.

It was not until the year 1910 that an effort was made by a group of people to formulate an adequate definition of Home Economics, a complex subject which, within recent years, has come to have an important share in shaping the conditions and directing the activities of human life. The definition proposed by the Committee appointed to formulate it, and accepted by the American Home Economics Association, performed the splendid service of summing up the knowledge of the subject at that time and stating it in a convenient form for preservation and future investigation. The question now proposed is, "Is the definition of Home Economics as the Committee gave it to us an adequate one for our present needs?"

In the words of the Committee, "Home Economics, as a distinctive subject of instruction, is the study of the economic, sanitary, and esthetic aspects of food, clothing, and shelter as connected with their selection, preparation, and use by the family in the home or by other groups of people."

In reflecting on the meaning of the word "sanitary" it has seemed that it can not be regarded as furnishing a full account of the meaning which should be expressed. In itself it is only a fragment of the word which would complete the meaning. I refer to the word "hygienic." The question to be considered here is the question of the relation of sanitation to hygiene and of hygiene to sanitation. Sanitation refers to environment and is sometimes defined as "environmental hygiene,"

thus indicating that it is a division of the larger subject hygiene, which, according to Sedgwick and others, is the whole science and art of the conservation and promotion of health. It will be recalled that dietetics is also a division of the subject hygiene and deals with the individual and his perfection as affected by food and nutrition. As the definition of Home Economics now stands this phase of the food problem is not wholly included within its limits.

One other point seems worthy of consideration, namely, the sociologic aspects of the subjects enumerated. In addition to the economic, hygienic, and esthetic aspects might well come the sociologic aspects with reference to how much protection of life and property the citizen is to receive, how good shall be the living conditions of the community, and other questions intimately related to the daily life of the citizen as he is affected by food, clothing, and shelter, all of which is not merely a matter of personal hygiene, but a coöperative task of the entire community.

GRACE LINDER,
Ohio State University.

Mercantilism is the name given to a theory of trade that prevailed in the seventeenth and eighteenth centuries.

Mercantilism assumed that the strength of a nation depended upon the stores of silver and gold that it was able to accumulate and retain. It followed that imports were to be discouraged by tariff restrictions and otherwise, and exports encouraged; to the end that money might flow into rather than out of the country.

The fallacy of mercantilism consisted in regarding money alone as wealth and in not recognizing that other forms of capital have equal value.

The finances of many a home are conducted on the mercantilist theory. I have known a busy mother, for instance, to spend a couple of hours making a child's underwaist and to pride herself on having saved the thirty-five cents that the garment would have cost at the shop. Allowing fifteen cents for materials, she has exchanged her two hours' work for an equivalent of ten cents an hour. It would seem that a resourceful woman should be able to employ her time more profitably. A penny saved is not necessarily a penny earned; it may be a dollar unearned, and therefore lost.

MARY BARRON WASHBURN.

NEWS FROM THE FIELD

The Meeting of the American Home Economics Association in connection with the Department of Superintendence of the N. E. A. will be held in the Auditorium of the Eagle School at Cleveland, Ohio, on February 23 and 24.

Methods and tests applicable to home economics teaching in the high school, and the newer data on child feeding, are the three main divisions of the program.

The use of the project method in high school teaching, and applied economics in the one year home economics high school course, will be discussed under the first head.

How various tests may be used as a guide to teachers in evaluating a home economics course will be the first topic under the second group, and this will be followed by a discussion of some of the standard tests that may be applied in teaching textiles and clothing, and by an illustrated talk on economic tests for sewing in the vocational part-time schools.

A report on the field work of the Children's Bureau will precede a practical demonstration of the working of a feeding clinic for children under the general subject of child feeding. An exhibit of animals fed on different types of diet to show the effect of various foods on bodily growth and repair will emphasize the importance of proper food for children.

General discussion will follow the presentation of each division of subject matter.

The Annual Meeting of the National Society for Vocational Education will be held in Chicago, February 19 to 21, in co-operation with the Vocational Education Association of the Middle West, with headquarters at the Hotel La Salle.

The Vocational Homemaking Section

will have programs Thursday and Friday mornings.

The Home Economics Section of the Michigan State Teachers Association held a morning session at the Detroit meeting last October.

Mr. Roy Barnes of the Educational Research Bureau of Detroit spoke on the Project Method and Mr. Stuart Courtis of the same Bureau talked about Educational Measures in Relation to Home Economics. The Detroit Home Economics Association had arranged for a luncheon at the Federation of Women's Clubs, the Woman's Exchange catering. Miss Mary Baldwin of Grand Rapids, Acting Chairman, presided at the afternoon meeting and Mrs. Henrietta Calvin, Bureau of Education, Washington, D. C., gave an inspiring talk.

A Round Table Discussion and business meeting followed.

The Home Economics Section of the Arkansas State Teachers Association held a meeting at Little Rock October 31, Stella Palmer of Fayetteville acting as chairman and Mrs. Marion Cole of Helena as secretary. Adelaide Baylor of the Federal Board spoke on Vocational Home Economics, answering as well the many questions that arose. The Course of Study was discussed by Mrs. Cole and by Gladys Dowell of Jonesboro. Bessie Peay of Little Rock spoke on Evening School Classes. At the following business meeting the section voted to raise a sum of money to establish a scholarship for some Arkansas girl who wishes to prepare herself to be a home economics teacher.

The Home Economics Section of the California State Teachers Association held three meetings during 1919.

At the first meeting a luncheon was given in the Red Cross Lunch Room, San Francisco. Miss Maude Murchie spoke on Vocational Education.

The program of the second meeting included The Work of a Dietitian with the A. E. F., Miss Monica Clay, Dietitian Base Hospital No. 30; Home Economics Courses in the Public School, Now and To-Morrow, Miss Florence M. La Ganke, Director of Home Economics, Oakland Public Schools.

The third meeting was a luncheon and business meeting with an attendance of 85 members. Six sections were organized: (1) home economics teachers in the elementary schools, (2) in the secondary schools, (3) extension workers and teachers under the Smith-Hughes act, (4) supervisors of teacher-training classes, (5) dietitians, (6) administrators.

Miss Florence La Ganke, the newly appointed director of home economics in the Oakland Schools, was elected president.

Budget Information Bureau. The Bureau of Home Economics in the Savings Division of the First Federal Reserve District, which includes the New England states, is organizing budget information bureaus in banks, under the direction of Miss S. Agnes Donham, assisted by Mrs. Florence A. Warner. The plan is to have a home economics worker for one or two days a week in an individual bank ready to give information on individual and family budgets and advise as to how one can increase one's margin for saving. Mrs. Warner has recently been visiting banks in Maine where the proposal has met with a very cordial welcome. In several cases the banks are assigning a special clerk to be trained in budget conference work. Miss Donham has started in Boston a budget training class for clerks in banks.

Fellowships. Applications for fellowships in the University of Chicago should be received by the Deans of the Graduate Schools on or before March 1, 1920. Information concerning graduate work in household administration may be obtained from Professor Marion Talbot.

Notes. In 1916, the late Mrs. Lizzie Merrill Palmer of Detroit provided in her will a fund for the founding, endowment, and maintenance of a school where "girls and young women shall be educated, trained, developed, and disciplined with special reference to fitting them mentally, morally, physically, and religiously for the discharge of the functions and service of wifehood and motherhood, and the management, supervision, direction, and inspiration of homes." The trustees of the fund have wisely taken time to seek advice from many sources. They have appointed an equal number of women as co-trustees. They have studied the situation carefully and have persuaded Prof. Edna N. White, the president of the American Home Economics Association, to accept the directorship of the school as the very best person available. Miss White's resignation from Ohio State College and her entrance upon her new duties will take effect on February 1, 1920.

Margaret Gleason, a graduate of the University of Chicago with a master's degree from the University of California, has this year been appointed director of the Department of Household Arts at the College of Industrial Arts, Denton, Texas.

Up to this time there have been two directors, one for food and one for clothing, but Miss Gleason has had several years of successful teaching in both subjects. There are twenty-two teachers under her supervision. Out of the 1400 students in the college 900 are in the Household Arts Department and the total class enrollment is 1415.

A convention of delegates from national women's organizations was held in New York from the 17th to the 24th of October, following the International Conference of Women Physicians. Miss Cora Winchell and Miss Isabel Lord were asked to represent the American Home Economics Association.

At the conference on Problems of Education in Mining Towns, held under the auspices of the United States Bureau of Education at Pittsburgh, November 28 and 29, one of the topics discussed was the education of the miner's wife and daughters in homemaking.

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A NUTRITION CLASS

IN COÖPERATION WITH A SUMMER PLAY SCHOOL

MARY SWARTZ ROSE AND GERTRUDE GATES MUDGE

Teachers College, Columbia University, New York City

This summer there came to the Department of Nutrition of Teachers College an unusual opportunity for field work. The Federation for Child Study, conducting play schools in several districts in New York City, invited coöperation in the work of improving the children's nutritive condition. As an outcome of this invitation, Stuyvesant Neighborhood House, on the Lower East Side, was chosen as a center for a nutrition class to be conducted by the Department.

The Federation for Child Study and the settlement were together furnishing the children a noonday meal and a mid-afternoon lunch during the two months (July and August) of the session. The food was sent from a central kitchen to the various centers, under the supervision of a special luncheon director. But it is no easy task to feed little Jews and Italians, of whom the Stuyvesant House group mostly consisted, when they have never had regular meals nor acquired a taste for the right kind of food for children, even if one is versed in the peculiarities of Italian and Jewish cookery. There was need of a connecting link between the meals and the children if the food provided was to render its fullest service. Moreover, a large number of the children showed distinct signs of poor nutrition. They were all given a medical examination in June, and, of the 175 pupils enrolled at this center, more than 75 were reported to have malnutrition. For these the clinic was organized.

By good fortune there was a group of 25 students attending the summer session at Teachers College admirably fitted to engage in this piece of social work. They had had some training in dietetics and were enrolled for further study of this subject. The class offered a splendid opportunity for practical work and the students entered into the spirit of it mostly heartily. Accordingly, the class was organized on a group plan, three children assigned to each student, and the students associated in groups of three, one of whom could always be present at the clinic to look after the nine children assigned to the unit. Each student made weekly visits to the homes of the children entrusted to her personally, and the instructor in charge of the field work held conferences with the student units to discuss the situation of the children belonging to each unit.

The class-room weight records provided by the Child Health Organization were used to keep the weight records of each unit, and every week the child in each unit making the greatest gain received a red star on this class record, while each child making any gain at all received a blue star, and the one in the whole clinic making the greatest gain was rewarded with a gold star. Besides the class weight records, each student prepared individual weight charts in graphic form for her charges. These showed the normal gain to be expected for the two months and the actual weight week by week. The Manny table¹ was used in determining the normal gain.

The group met once a week, the children being weighed at the settlement the morning of the same day. They came to the auditorium in the settlement directly from their mid-afternoon lunch. Their mothers were urged to attend also and many of them came regularly, so that there were from 20 to 25 mothers present each week. Each leader of a unit gathered her children and their mothers about her and used this opportunity to strengthen the bonds made by the home visiting. The air was charged with friendliness, and to see the big room full of eager children and interested mothers gathered in these little groups was an inspiring sight.

When the meeting was called to order, the first number on the program was a short talk by the director of the clinic, stressing some point about food in relation to health. To attract the children's attention and serve as reminders of past lessons several of the charts prepared by

¹ Sherman: Chemistry of Food and Nutrition, p. 372.

the New York Association for Improving the Condition of the Poor were used, and also some from the National Child Welfare Association. The "text" of the first lesson was "Drink at least two cups of milk a day." One of these was furnished by the play school in the mid-afternoon lunch, the other the children were urged to take for breakfast. Each week thereafter they were questioned as to how many were getting the home cup of milk, how many had learned to like milk, and how many were trying to learn. The number of milk drinkers increased steadily throughout the session. Joseph F.'s mother became so interested in trying to make him like milk that she went of her own accord and bought him a new cup; and at the suggestion of the home visitor she added drinking straws from the soda fountain; all of which proved an effective incentive for Joseph.

The second lesson laid down the law, "No tea and coffee," and thereafter the children were given special seals on their individual weight charts when they had had neither during the week. At first the use of tea and coffee was well-nigh universal, but by the third week many of the children were saying at home that they did not want them. Sam B.'s mother attended the clinic faithfully, although she could not speak English at all. Sam was addicted to coffee and it did not seem as if much impression could be made upon his eight-year-old self-sufficiency; yet by the fourth week it was gratifying to find that Sam's little sister, who did not come to the clinic, was beginning to get milk and Sam did not want any more coffee.

The third session stressed the eating of vegetables; the fourth, chewing for the sake of the teeth, as many of the children were being sent to the dental clinics by the nurse assisting in the play school work; the fifth and sixth lessons introduced vegetables again, as these were the foods with which the children were least acquainted of all the kinds they needed. At first they very generally refused to eat them at the noon-day lunch. When a kind friend sent in lettuce for the children's sandwiches one little girl said that she liked the bread but did not want to eat the *flower*. No such series could ignore cereals and dried fruit, and these were touched in the last lesson.

Each time in connection with the lesson there was a demonstration of the preparation of some food which it was desirable to have the children learn to eat, and to have the mothers prepare for them at home. Cocoa was taught as an alternative to milk, and Mrs. Mary Shapiro, the dietitian of the Allied Hebrew Charities, very kindly came and

talked to the mothers in Yiddish, which won their hearts besides reaching their minds. Each child and each mother had a taste of whatever was prepared, so that they could compare notes and talk it over with the student with whom they were associated. Lack of parental control is so characteristic of these families that not much progress in food education can be made unless the mother knows that the child will eat the food if she provides it. The initiative has to come from the children themselves; what they demand they will get. The older children will often assume authority over the younger ones in a very effective way. For the chewing lesson small squares of crisp toast were distributed and a veritable chewing match held on the spot. At the same lesson milk toast was taught as a good supper dish and it looked like a huge picnic when "teacher" held a big bowl of the toast, surrounded by a dozen waving paper spoons each claiming a share.

Other lessons included a vegetable salad, a vegetable soup, a stewed vegetable with a sauce, and a rice pudding with raisins. Mrs. Florence Wright, home demonstration agent of Fitchburg, Mass., very kindly gave the rice pudding demonstration and succeeded in making her audience enthusiastic over a dish that had been absolutely refused in the lunch room a few weeks before. Potatoes and onions were about the only vegetables with which the children were familiar. They picked the string beans out of the luncheon soup and refused utterly anything with carrots in it. Isadore W.'s mother said he wouldn't eat cauliflower or spinach unless he was spanked! But after they had sampled together a string bean and potato salad seasoned in the fashion of the Jewish home and had been induced to consume carrots by the mighty influence of the crowd, they behaved better toward the food in the lunch room. The children became interested in food that would make them grow, so that they might get blue and red and gold stars and thus become distinguished members of society. It takes strong motives to conquer food aversions!

A lively feature of the class was this song, composed by one of the students and presented one verse a week, with a special chorus for the last meeting.

CHILDREN'S NUTRITION SONG

(Air: Keep the Home Fires Burning)

1. We are many little children
Who come each day to school,
And we play and sing and are happy
Though the days are none too cool.
We have luncheon in the schoolhouse
And in eating we are strong,
We like milk and bread and pudding,
And we sing this merry song:

Chorus:

Does your chart show gaining?
Is your weight increasing?
Though the gold star's far away
There are red and blue.
There's a golden lining
Through the dark clouds shining;
Turn the dark clouds inside out
Till the gold shines through.

2. We won't drink tea or coffee
But we will drink milk instead,
And at nine o'clock each evening
All of us will go to bed.
We will eat all that you give us,
All we possibly can chew,
And we'll surprise the teachers so
They won't know what to do.
3. Do you know that milk makes muscle?
Beans and spinach help you grow?
And that bright eyes, hair, and red cheeks
Come from eating these we show?
We are going to be strong women;
We are going to be strong men;
And when our country needs us
You will find us ready then.

Chorus for Last Session:

All our charts show gaining,
And our weight increasing;
Some have gold stars pasted on,
Some have red and blue.
There's a golden lining
Through the dark clouds shining,
Turn the dark clouds inside out
Till the gold shines through.

Reports of the weekly gains in weight naturally had a prominent place on the program. Each leader told about the progress of her group and the child in each group gaining most was called to the platform and publicly congratulated. The mothers were radiant when their children were thus rewarded. Their eyes shone and they embraced the returning children ecstatically. When Nellie F. gained 5 pounds the week after she had her tonsils out, everybody applauded; and when little eight-year-old Abie W., 11 pounds under weight, with three teeth out and a bandaged head, came up to receive a star for a half pound of flesh it was a great moment.

Thus, with the food lesson, the demonstration, the individual reports, the song, and the food distribution, the hour was gone before anyone realized it. Then the children who were farthest below par in each group were brought to the public health nurse for inspection and instructions. These conferences were as helpful to the students as to the children. Throughout the week the students tried to follow up her suggestions, getting parents to consent to the removal of tonsils or other medical measures as well as urging the children to get to bed early, brush their teeth, and eat the right kind of food.

When the class closed there were 50 children who had been in practically constant attendance from the beginning. In age they ranged from six to fourteen years, the majority being nine or ten. In the case of 35, more or less home coöperation had been secured and here the best results were obtained with the children. Thirteen had had their tonsils out and some of these did not recuperate in time to make any gain in weight. Thirty-one gained over 1 pound each and 42 made some gain. Excluding one tonsil case, in which there was the phenomenal gain of 13 pounds, the average gain for the two months was 2 pounds apiece for all who gained at all. Ten gained 3 pounds or more. At the last meeting a huge gold star was awarded to the one who had made the greatest gain and a copy of that attractive booklet of the Child Health Organization, "The Child's Health Alphabet," was given to the child in each group who had made the greatest gain in that unit. Little William C., nine years old and 7 pounds under weight, who had absolutely no care at home and had walked miles to attend the school and the clinic, received no prize, for his total gain was only half a pound, but when he came at the close of the session and in a pleading voice, with still more pleading eyes, begged for "the extra picture book" one's heart melted and he received it. He had never missed a session in spite of all his handicaps.

Of course, the credit for these results belongs to the enterprise as a whole and not to the class alone. The noonday lunches offered each child an opportunity to secure from 1000 to 1200 calories daily, if he would accept the food provided. Below are typical luncheon menus for one week, August 11 to August 15.

Monday: lima bean and barley soup; rye bread and butter, graham bread and jam; ice cream (donation).

Tuesday: baked beans with tomato sauce, graham muffins, rye bread and jam, apple sauce.

Wednesday: oatmeal mush with raisins, rye bread and butter, graham bread and jam, stewed prunes.

Thursday: vegetable soup, corn muffins, graham bread and jam, cottage pudding.

Friday: salmon and potato loaf, rye bread and butter, graham bread and jam, stewed fruit.

The mid-afternoon lunch of milk and crackers was taken by practically every child. Joseph F. did not like the milk but he did want the cracker and they would not let him have the cracker without the milk, so he accepted the milk too. The two meals together aimed to furnish each child about a pint of milk daily. Fruit was quite liberally supplied and vegetables were freely used in soups. Some of the children had little food beside what they received at school. Anna Y. came from a home where the mother was difficult to approach. She had for breakfast coffee, a roll, and sponge cake; on her way home from school a lollipop; and for supper, wine (often whiskey, of which her mother said she was very fond), and shrimp. Poor Anna, ten years old and 10 pounds under weight, with a generally bad physical condition, gained only three-fourths of a pound in six weeks, after which she was sent to the country, where it was hoped she would have better care. Yetta K.'s mother could not speak English, and Yetta had no breakfast and could not go to bed before midnight because there was no dark or quiet place where she could sleep until then; but Yetta ate heartily at the school and gained 5½ pounds in one month. In such cases the most valuable service rendered by the clinic was probably helping to keep the children in school. The visitors over-ruled various objections which the children made to going to school; found them companions when they did not want to come alone; reassured them when they feared the food because of some other child's remarks, as, for instance, that the cottage pudding had castor oil on it (for thus

many of them interpreted the unheard-of sauce and it had to be discontinued!); and generally kept up the uncertain interest of these little children who received no support in their school-going from their homes.

At first the clinic children generally had no appetite, as was to be expected. But the clinic work soon began to tell. The following is a typical visitor's diary record:

End of first week: Mother is trying to get children to bed by ten o'clock. Is much interested and very appreciative of the interest in her child.

End of second week: Mother is trying to get them to go to bed still earlier. Is preparing cocoa for breakfast.

End of third week: Mother is cooking breakfast cereal as well as cocoa. They are also getting fruit every morning, and the girls have both red seals for "no tea and coffee." The children do not like the cocoa and cereal as well as bread and coffee but are trying hard to learn to eat them.

One of the most interesting family groups consisted of a mother with four children of her own plus a nephew who spent the day with her children because his mother worked away from home. The student's record says in part:

July 23, 1919. I visited Mrs. F. and met her on the street. She said the children ate no breakfast and very little of anything which she cooked. They liked candy and ice cream cones which they bought on the street. They drank coffee and did not like milk or cocoa. I asked her when the children went to bed and she said they played out on the street from four-thirty, when school closed, until eleven or twelve o'clock at night.

July 24, 1919. Mrs. F. seemed to enjoy the cocoa which was prepared at the clinic today. She observed that her children clamored for more and she promised to make some at home.

July 31, 1919. I called on Mrs. F. on the day of the third meeting of the clinic. She was planning to attend it. She said the children had eaten more for breakfast this week and were liking milk better than before. She had made cocoa twice and the children drank it and asked for more. She added that the children did not want her to make coffee any more.

August 5, 1919. I called on Mrs. F. this afternoon. N. had gone to the hospital to have her tonsils removed. Mrs. F. said she had made potato salad (potato, fish, and string beans) on Sunday just as it had been prepared at the clinic and the children liked it. She had bought two quarts of milk each day and made cocoa nearly every day.

August 12, 1919. I called on Mrs. F. and found her very busy as she was going to have company for supper. She said she had made milk toast three times since the last clinic. She is now buying three quarts of milk on some days. The children are now going to bed at nine o'clock every night.

After N. had her tonsils removed she gained rapidly and at the last meeting received the gold star for the greatest gain in weight, 13 pounds. Her general health was much improved. D., aged 7½, gained 5½ pounds; A. and S., twins approaching six, remained practically in statu quo. Cousin J. gained 2½ pounds and is now exactly normal in weight for his age and height. Mrs. F. says she has less trouble in getting her children to eat things at home than she had before the clinic started. "They will eat foods now because they believe they will make them grow."

In the last analysis the greatest gain came to those who shared in the conduct of the class. This type of work is in its infancy. We are especially indebted to Dr. W. H. Emerson and Dr. Charles Hendee Smith for demonstrating the power of group rivalry as an incentive to proper eating and other habits essential to normal growth of children. The literature of the nutrition clinics has been ably reviewed by Miss Lydia Roberts, who has also reported in some detail nutrition work carried on by college students under her supervision.² A number of clinics are now maintained by social agencies in New York City at which the children are weighed and instructed in health duties, under the stimulus of class spirit as an incentive for improvement. In this particular undertaking we were able to get a great deal of enthusiasm from the relatively large number of people participating. Children, mothers, and "teachers" filled a good-sized auditorium and this of itself was inspiring. The food demonstration and sampling were perhaps the most unique feature, and one whose value appeared to be well proved. The connection with the school lunch made possible a progress that was encouraging to all concerned and could not have been secured otherwise. The hearty support of the settlement staff was a large element in the success of the undertaking. The social visitor was unfailingly helpful, from the day when she introduced each trembling prospective visitor to her family till the day when all the prizes were awarded and the last child sent home. The school nurse was most sympathetic in her attitude and practical in her suggestions; and the luncheon director

² *Jour. Home Econ.*, Jan. and Mar., 1919.

did her best to bring about a coördination between the instruction in the clinic and the food provided by the school.

Since many of the students who participated were already experienced home economics teachers and leaders in the communities from which they came, there is no doubt that this piece of field work was of value in demonstrating the possibilities in this kind of work, in giving them some first-hand experience with the organization of a health class, and in bringing them into direct contact with the individual home.

WHAT CONSTITUTES RESEARCH IN HOME ECONOMICS?

MINNA C. DENTON

Office of Home Economics, United States Department of Agriculture

Comparatively little has been accomplished in the way of research in home economics. The number of institutions in the country which have fostered work of a high grade, truly meriting the name of research, is limited. Yet the field is very large, including as it does those bodies of science, economics, art, and education which are or should be applied to home problems. The demand for more precise information than we now possess, in each of these realms, is urgent.

No inconsiderable part of this demand is for answers to what seem at first sight, rather simple questions; e.g., a professional woman criticizes a thrift propagandist for condemning silk stockings and silk underwear as an extravagance. In these days of impossible laundry and servant conditions, she argues, a woman saves both time and money by purchasing a good grade of silk and laundering it herself each night; she can thus make the silk hose last longer than would cotton or lisle hose purchased for the same money, and the time she spends in laundering is offset by the time she would have spent in mending hose sent to the laundry or washerwoman—supposing that a washerwoman is indeed to be had. “Why don’t some of you home economics people publish a study bringing out such points?”

Incidentally it may be remarked that perhaps the problem is rather,—Does it pay better to buy an expensive grade of hose of fine texture, whether silk, cotton, or lisle,—and give them the daily attention suggested,—rather than to spend an equal amount of money in cheaper

and coarser weaves of the same or of other textiles, since the daily washing may lengthen the life of all three textile fibers equally?

Now this would at first sight seem to be a very simple sort of study, and one which a freshman, or even a high school girl, ought to be capable of making. What could be less complicated than to purchase representative pairs of each grade of hose, record date and price, wear each on alternate weeks, record dates upon which holes appear and time spent in laundering and mending, and let the facts speak for themselves? But should such a study be considered worthy of the name of research?

Let us pause a moment to consider the definition of research. At least four elements must receive attention:

1. The problem attacked should be one of some practical interest, or else connected organically with that body of "pure" science which underlies all "practical" and other human interests. It must be one which has not yet been satisfactorily or completely solved, so far as can be determined by a review of all available literature.

2. The problem must be successfully analyzed; i.e., a complex situation must be resolved into its elements. All of the variants which may affect the final result must be recognized ultimately, although it is often not possible to recognize all of them at first; yet the success of the work depends largely upon the skill of the investigator in recognizing as great a number as possible, and in planning carefully controlled tests to eliminate all variants *except one*, in each test; the whole series to give the effect of each variant in turn, so far as time and resources permit. The plan of the experimenter should be, not to prove or to disprove this or that preconceived notion, but to find the truth; she must be able to reverse her judgment at any moment that the evidence demands a change of verdict.

3. The methods used must be precise methods, and should utilize all known resources of science, art, technology, or economics, in so far as these resources can be made to apply to the matter in hand. Original methods may be worked out, and must be demonstrated by checking them against known facts. When possible, more than one method should be used, in order to arrive at the same fact from different angles. All materials used for experimentation must be shown to be uniform from time to time, and also representative of their class.¹

¹ For further amplification, see "What is Experimental Cookery?" *Jour. Home Econ.*, March, 1919.

4. The conclusions demonstrated by the study in question should be precisely formulated, carefully qualified, and published (together with a full description of the methods) in such a medium as to be available to that class of persons best qualified to judge the worth of the study. These conclusions, even if negative, should constitute an addition to existing knowledge, as that knowledge is reflected in the literature of the subject.

Now our problem of silk hose vs. cotton or lisle hose, or of fine expensive hose vs. cheaper coarser hose, is certainly one of practical interest. It has undoubtedly received attention from a great many women, and been satisfactorily disposed of, so far as their own personal affairs are concerned; but the question is, would their experience if published, be of real value to a considerable body of other women, or is it perhaps in some way exceptional?

Secondly and thirdly, can this problem be analyzed and studied in any precise fashion? Are there materials at hand, fairly representative of the market, sufficiently standardized so that any woman wishing to avail herself of others' experience and reading of the study, could obtain substantially the same article which was studied? And is it possible to be sure that the tests to which one subjects these materials are always the same from week to week, or are about the same as the tests which they would necessarily encounter if put into customary use by other women? Here, of course, is the rub.

In order to make sure that the materials tested are truly representative, one would need to make a fairly complete survey of the markets open to that body of women whom one wishes to serve. It is not sufficient to be a good practical judge of such textile materials,—since one cannot demonstrate the degree of fitness as such a judge, merely by stating one's qualifications on the printed page. The material used should be specified exactly, and not as the consumer ordinarily specifies it. "A pair of \$2.00 Asterisk silk hose, purchased at Johnson's in Emporia on November 4, 1918," e.g., is by no means a sufficient description even though the Asterisk hose may chance to be known as a standard make, in that part of the country. It should rather be specified as the wholesaler and the manufacturer specify it. How to make available "all known resources" of information concerning a trade-marked article, whose manufacturers are as a rule anxious to preserve their secrets, is indeed a problem. Friendly retailers or buyers may give interesting data and many valuable suggestions, yet their unsupported

statements cannot always be relied upon for research purposes. Nor has the testing of textiles been developed to as advanced a stage as that of the testing of foodstuffs. Notwithstanding all these discouraging difficulties, however, the persevering investigator may sometimes succeed in obtaining a reliable history which persuades her that she has a representative article worth studying; and that she can so specify it that other women may ask for the same thing, with a fair degree of probability that they may obtain it through reliable dealers.

The matter of devising a fair test of wearing qualities does not present formidable difficulties. It is true that S. walks at least seven miles a day, and T. not more than two; that M. dances a great deal, while N. never does; that A. has a peculiar way of setting her feet down (probably unnoticed by herself as a causal factor applying to this problem) which causes her to be "very hard on her stockings;" that two successive weeks in any person's life may show very different degrees of activity with regard to the feet; that some shoes are much "harder on stockings" than others; that the influence of perspiring feet, of soap and of other laundry details, is highly variable. But the enterprising experimenter will devise tests which are representative because of their selection and numbers, and because as many conditions as possible have been standardized. She will not draw her conclusions from experience with only two pairs of hose, nor from tests carried out by a single individual. She will consider carefully the influence of circumstances common in every day life, but not encountered in her tests; and she will modify her conclusions accordingly. Incidentally, she will doubtless gather a considerable fund of information concerning varieties of textiles to be encountered in her local markets; also concerning some of the reasons why one girl can wear her stockings twice as long as another, before wearing them out. These "by-products" of research are sometimes even more valuable than the conclusions originally sought for.

Conceivably, then, a method may be worked out for making a systematic study of the above question precise enough for practical purposes, if a sufficiently large number of tests be made. Under these circumstances, the study may be suitably termed research of an order adapted to the undergraduate student in home economics.

If it is desired to adapt the problem to graduate work, additional elements may be superimposed, which will call for a more precise method of testing, or for a more elaborate study of some single aspect of the question which is susceptible of more exact determination. For example,

the effect of some of the salts found in the perspiration upon tensile and other properties of textile fibers, as studied by the usual machine and microscopic methods, may be taken up. Or possibly a method might be devised for studying the peculiarities of the muscular performance, in walking, of a girl who invariably wears out her shoes in the middle of the sole first of all, and who is correspondingly "hard on her stockings." Any other detail which serves to indicate degree of correspondence between machine testing of textiles and the test which they encounter in actual wear would be an equally good subject of study.

The survey method is necessary in many studies of home problems in economics, as well as in other phases of our subject. The survey is of value only as it accurately reflects actual conditions, and in so far as it is truly representative of some natural group or of some locality. It is of no special interest to know what were the monthly grocery bills in seventy-five homes in a town of 1000 inhabitants, unless we have some way of judging *which seventy-five homes they were*; whether most nearly representative of professional men's expenditures, of day laborers, or of dependent families. The banker's family may spend \$100 a month for food, a janitor's family \$25; the average of these two sums represents neither of these families, and nothing else under the sun that is of practical interest.

All the human elements which affect the gathering of data for the survey must be taken into account, such as the desire of the laborer's wife to make it appear that her family lives well, and the consequent raising of her estimate; or the desire of the home-economics-trained housewife to make it appear that she is a thrifty manager, and the consequent selection of an estimate which is perhaps a little low rather than a little high.

Research is an attitude of mind if it is anything, and the ability to sift critically the evidence before rendering a judgment is not only one of the highest attainments of the research worker, but also one of the most valuable of all attainments for meeting the little exigencies and the great crises of everyday life. It therefore would seem that at some time before she graduates the home economics student might well be put up against a problem which she must work out, without any chance to "find the answer in the book." She may not make discoveries which greatly enhance the world's stock of knowledge, but at least she will have been given a fair opportunity to lose some of her undue reverence for the printed page; to develop the power to discriminate between

first-hand knowledge and hearsay testimony, whether spoken or printed; a critical sense for the merits of a disputed case; the ability to exercise suspended judgment; and possibly she may even develop those rare qualities, the initiative and the insight which enable the finite human being to wrest some of its secrets from the great unknown.

DIETARY STUDIES

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Dietary studies carefully supervised have long been recognized as a valuable source of information on many points. Those made under the leadership of Professor Atwater brought together a vast store of information about living habits. Recently the United States Department of Agriculture has collected more data by this same method.

It seemed to the members of the Home Economics Department of the University of Illinois that such studies might serve two purposes: first, give data regarding food supplies and living habits of students; second, these data might serve as a help in finding economic and practical ways of securing an adequate diet according to accepted standards with present high prices. As a result, the Department is able to report the following.

These studies involved some three hundred people living in sorority, church, and coöperative houses. The work was carried on according to approved methods for a seven-day period. Twelve studies in all were made, six of them in partial fulfillment for a master's degree.¹ For purposes of this paper, data from nine of these groups are averaged.

Table 1 shows: a minimum cost of 37.1 cents per person per day, and a maximum of 43, with an average of 40.3; a calorific value varying from 2038 to 3023, with an average of 2419; a protein minimum of 56.6 grams, a maximum of 88.9, with an average of 69.5. It thus appears that the quantity of food is fairly satisfactory, both in calorific value and in the amount of protein, fat, and carbohydrate, and

¹ "Dietary Studies" conducted by Mrs. Ethel C. Yunker, 1919.

the cost not extravagant, though in No. 9 the 56.6 grams of protein and in No. 3 the 2038 calories used are too low for the active life led by these students.

TABLE 1
Data from nine groups

NUMBER OF HOUSE	COST OF FOOD PER PERSON PER DAY	AVERAGE CONSUMPTION PER PERSON PER DAY				COST OF WASTE PER PERSON PER DAY	COST OF REFUSE PER PERSON PER DAY	"OUTSIDE EATS" PER PERSON PER DAY	
		Protein	Fat	Carbo-hydrate	Total calories			Calories	Cost
	<i>cents</i>	<i>grams</i>	<i>grams</i>	<i>grams</i>		<i>cents</i>	<i>cents</i>		<i>cents</i>
1	40.5	76.0	101.0	273.4	2306	1.4	3.6	142	9.1
2	37.1	68.5	108.8	265.9	2317	0.7	1.7	251	15.2
3	41.7	65.6	79.9	264.2	2038	1.8	3.6	202	10.3
4	43.0	64.7	105.1	308.9	2440	1.1	1.8	184	10.9
5	39.4	62.8	89.7	270.3	2140	0.6	3.0	191	10.8
6	39.5	80.2	120.3	404.9	3023	none	—*	none	none
7	42.1	88.9	113.9	364.9	2840	none	—*	—*	0.8
8	38.4	62.4	102.0	311.0	2412	0.4	—*	—*	—*
9	40.7	56.6	122.9	230.0	2253	2.8	—*	218	—*
Average....	40.3	69.5	104.8	299.3	2419	1.2†	2.7‡	170	8.2

*Data not available.

†Average for seven houses.

‡Average for five houses.

Few such studies are available for comparison. Four others have been selected, viz.: those made at the University of Chicago in 1896, involving 130 people; at Lake Erie College in 1900, with 103 people; and two studies at the Boston School of Housekeeping in 1901, illustrating respectively an expensive and a low-cost dietary. Table 2 gives the results of this comparison.

TABLE 2
Comparison of studies

YEAR	PLACE	NUMBER OF PEOPLE	COST PER PERSON PER DAY	AVERAGE CONSUMPTION PER PERSON PER DAY			
				Protein	Fat	Carbo-hydrate	Total calories
			<i>cents</i>	<i>grams</i>	<i>grams</i>	<i>grams</i>	
1919	University of Illinois.....	300	40.3	69.5	104	299.3	2419
1896	University of Chicago.....	130	25.0	108.0	102	381.0	2955
1900	Lake Erie College.....	103	18.0	68.0	115	321.0	2665
1901	Boston School of Housekeeping.....	16	22.6	94.0	127	317.0	2776
1901	Boston School of Housekeeping.....	16	51.1	118.0	115	390.0	3057

According to accepted standards, the amount of fat is high in all of the studies. The fact that the protein and the total calories at Lake Erie College and the University of Illinois are practically the same, while the present cost is more than double, is added testimony to the high cost of living. The high protein and carbohydrate in the Chicago University dietaries are noticeable and account for the high calorific value. The explanation for the high amount of fat in the study at Lake Erie College, and probably in all the studies, is due to the fact that in a restricted diet one always makes larger use of bread and butter. At present prices, if butter is used freely, it adds much to the total cost of the food. It may be that one permanent result of the lessened use of meat will be the increased use of butter or butter substitute.

It is interesting to note that in the days of the Boston studies, 1901-02, the following menu could be secured for 51 cents per person per day.³

Friday, May 2

Breakfast.—Grape fruit, wheat breakfast food, rump steak (garnished with water cress), baked potatoes, buttered toast, orange marmalade.

Luncheon.—Cream of asparagus soup, ragoût of duck, lettuce and orange salad, brown bread sandwiches filled with cream cheese and water cress, wheat-bread sandwiches filled with cucumbers dressed with maitre d'hotel butter, caramel charlotte russe.

Dinner.—Clear tomato soup, broiled mackerel garnished with lemon and parsley, cucumbers with French dressing, potatoes with maitre d'hotel dressing, spinach on toast, chicory salad, cheese croquettes, tutti-frutti ice cream, coffee.

It is recognized in these days that an adequate diet is not translated fully in terms of protein, fat, and carbohydrate, that other elements than cost and quantity enter into dietary studies. Emphasis now is put upon the character of the protein and the necessity for vitamins. A closer study of the menus used at the University of Illinois reveals the fact that the high calories of No. 6 are due to the large amount of carbohydrates in the form of sirups, while both Nos. 6 and 7 are lacking in the use of fresh vegetables, and consequently in minerals and vitamins. Attention is called to the fact that No. 9 is excessively high in fat, 122.9 grams, though its calorific value is not correspondingly high, due to its

³ Bulletin No. 129, Office of Experiment Stations, United States Department of Agriculture, p. 22.

low carbohydrate, 230 grams. Extremes apparently meet in this study, for it is lowest in protein, 56.6 grams, lowest in carbohydrates, 230 grams, and highest in fat, 122.9 grams.

It seemed desirable to estimate somewhat carefully a few of the staple articles, such as milk, cream, butter substitutes, cooking fat, and sugar. While the government regulations were not in force, it is probable that the habits acquired were being observed because the use of sugar and butter substitutes was not excessive. As a matter of fact, the sweetening was partly sugar substitutes. The almost entire absence of cream and the small amount of milk indicate very serious faults in the selection of the food. A generous use of milk is a great factor of safety in any restricted diet; moreover it is comparatively inexpensive.

The average consumption per person per day of some staple articles is given in the following table.

TABLE 3
Average consumption per person per day

NUMBER OF HOUSE	MILK	CREAM	BUTTER SUBSTITUTE	FAT	SUGAR	REMARKS
	<i>OUNCES</i>	<i>OUNCES</i>	<i>OUNCES</i>	<i>OUNCES</i>	<i>OUNCES</i>	<i>OUNCES</i>
1	10.9	0.8	2.1	0.6	3.0	0.2 fat drippings
2	8.1	none	1.1	0.6	2.1	
3	9.6	0.3	1.9	1.2	2.1	
4	2.7	0.2	1.5	0.2	1.6	0.7 skim milk
5	4.0	0.8	1.7	0.7	2.2	0.3 skim milk
6	5.3	0.2	1.6	0.5	2.6	0.9 skim milk

Incidentally the study revealed some facts concerning the living habits, not appearing in the table; for example, only 75 per cent of these people appeared at breakfasts. Apparently this lack of food was not made up until lunch as the "outside eats" belonged to the afternoons.

Waste is a very variable quantity, depending upon the groups studied, the sense of values of those responsible, as well as the eating habits of the individual members of the group. The refuse depends upon at least two factors: wise buying and careful preparation. It was a great surprise to some of the people making the studies that 32 pounds of potatoes yielded 17 pounds of refuse. In the nine studies averaged, the figures show comparatively little waste, an average of 1.2 cents per person per day. However, in the groups not included in the averages, the amount of refuse and waste was much greater, due to at least two factors, both common school-girl practices, namely, irregular appear-

ance at breakfast, and indulgence in the sundae and chocolate-bar habit. It took some little time, apparently, for the students to realize that sundaes taken at five o'clock made meat and potatoes seem very unappetizing at six, and that it would be wiser for them not to be served meat and potatoes rather than thus to increase the waste. One other source of waste was the large amount of bread broken and left on the plates.

"The congenial calories of the candy shop" have long been associated with school girls. In this particular study, it appears that the diet was supplemented in one case by a maximum of 250 calories, and a minimum of 142, with an average of 170, while the cost per person per day varied from 9 to 15 cents for the calories so obtained—not so large as the 10 per cent of the daily intake accredited to Vassar.³ However neither the money value nor the calorific value is the question at issue here. The use of candy in the diet is the question. Often it is not a desirable addition because it interferes with the use of more substantial and more necessary food. These students need building material and vitamins as well as fuel, and in most cases the 10 or 15 cents which half the students expended on sweets might better have been contributed, and in this instance should have been, to providing milk and fresh vegetables in the general dietary. An inadequate diet leaves an unsatisfied craving for something, and the student is very likely to meet this sense of something lacking with a chocolate bar or chocolate sundae. In rare cases, this may be a desirable addition, but it is far more probable that a better selected dietary, eaten at the regular hours, would have removed this unsatisfied longing.

HOME PROJECT WORK IN UTAH

The home project in Utah, after some months experience, has become a permanent part of the school curriculum, though a year ago it was thought of only in the haziest possible way. The summer project, especially, has met with the favor of both teacher and pupil, and the girls are convinced that the project idea has been a decided factor in making a satisfactory vacation.

Preferably the project is a logical outgrowth of the work of the school

³ See *Amer. Med. Jour.* Oct. 26, 1918, and *Jour. Home Econ.*, March 1918.

year. Successful projects have been carried on in sewing, dress-making and millinery, baking, preparation of meals, preservation of food, household management, including actual participation in different home activities, and in money making projects including personal accounts. One-half to two-thirds of the required time may be spent on varied household activities. The required amount of time for each project is 150 hours, approximately equal to one-half unit credit.

At the Granite District High School the reports of the individual students at their last meeting showed enthusiasm, success, and development. One little girl proudly recounted her troubles, which have changed to successes, in learning to sew. Her first dress, on which she spent 23 hours and a bushel of tears, she considered unfit for inside inspection, so she wore it to the school house for the teacher to see. When the dress was examined it was found that the sleeves were reversed! The next dress was completed in eleven hours and a duplicate made for a younger sister in seven hours, both of them finished inside and out in a way of which the maker could justly be proud. Stories of equal development of skill were told by other girls who had taken projects in meal planning, marketing, and food preservation.

In answer to the question "Will projects be equally successful if carried on parallel to the work done in school?" the decided answer was, "No, they will not because there are so many other demands on our time in the winter that we cannot enjoy doing the things as we do in vacation time."

Two other points seem to favor home project work during the summer. It is a decided bond between the girl, the mother, and the school, and it has some social value, especially in scattered localities where it is a direct means of getting girls together. This is illustrated by the group of girls in one district who planned and estimated caloric amounts and costs of food supplies for a three days' camping trip. They arranged and supervised transportation for themselves and a teacher and her friend who acted as chaperons, as well as for the bedding, food, and other supplies that they had purchased or prepared. The management and execution of the entire outing was directly on the girls who were undertaking this project, and as it went off from conception to finish without a hitch, this training in team work, as at least one mother appreciated, was well worth the time of the girls.

The work in school is carefully planned not to duplicate the work done during the summer.

SUGGESTIONS FOR A DEMONSTRATION ON THE SELECTION OF CLOTHING

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Member of Committee on Standardisation of Textiles, A. H. E. A.

Many courses in household arts departments in the public schools and colleges have lately had their names changed. The word *clothing* has been substituted for *sewing*. The new name indicates a new content in the course which in turn implies new methods of instruction. Taking it for granted that we shall no longer teach only sewing and dress-making but that we shall train women, who, as consumers, spend 96 per cent of the amount spent annually in the United States for clothing, what methods shall we follow in giving instruction in clothing courses?

Teachers are everywhere presenting the subject in new and interesting ways. The following plan for a lesson is the result of the experience of several teachers and is offered merely as a suggestion for presenting certain phases of the clothing problem.

The plan is to show garments on living models, really a style show with style in the background and with suitability, durability, and becomingness to the front. The following outline sets up the scheme for the lesson:

Aim: To teach the selection of outer garments from the standpoints of suitability, durability, economy, becomingness, health, and efficiency.

Types of garments: House dresses, school dresses, "best" dresses, party dresses, suits, sport clothes, coats, hats, shoes, accessories.

Methods of procuring garments: From the wardrobes of students; borrowed or rented from local stores; the product of class work.

Methods of presenting lesson: Teacher plans and conducts lesson; teacher plans and pupils conduct lesson; pupils plan and conduct lesson; mature pupils made responsible for groups conduct class as a demonstration problem.

Points to make regarding garments:

Suitability: (a) to circumstances, (b) to the occasion, (c) to the personality of the wearer, (d) to purpose for which it is intended.

Durability (length of wear): (a) material—color, weave, fiber, (b) style, (c) trimmings.

Becomingness: (a) color, (b) line, (c) details—such as neck line, (d) trimmings.

Economy: (a) original cost, (b) cost of upkeep, laundry, difficulty in cleaning, repairing, (c) cost in relation to frequency and length of wear.

Health: (a) hygienic properties of fibers used in materials, (b) easily kept clean, (c) protection against weather, (d) freedom of movements permitted.

Efficiency: (a) material, color, and style to permit most efficient use of dress, (b) freedom of movements permitted.

Variations of plan: Good vs. bad taste; emphasis on any particular phase of the subject as hygiene, thrift, costume design, simplified clothing, home made vs. ready-made clothing, remodeled clothing, children's clothing.

With the coöperation of the physical training department a very good lesson on the hygiene of clothing could be arranged. The models should be clothed for different occupations, climates, kinds of weather, and activities. An interesting variation of the lesson would be to have models of different ages, from the infant to the grandmother.

Thrift or economy or both can be emphasized by showing garments requiring much and little material; garments which are suitable for more than one purpose; garments planned for economy of time and strength devoted to their making, laundering, or care; garments with high initial cost but no cost for upkeep, and vice versa; garments that will give long wear and short wear. This lesson might end with showing two models, clothed in entire wardrobes, one selected from the standpoint of thrift, the other with no regard for thrift.

The lesson in which costume design is to receive the emphasis should be given jointly by the clothing and art departments; color, line, and proportion should govern the choice of garments to be shown.

Where there is sufficient interest in simplified clothing, a lesson might present models showing different attempts to simplify dress, such as the Biennial Dress of the Women's Clubs, the Peter Thompson, the Hoover Dress, the middy blouse, or the Norfolk Jacket. The distinctive points of each garment and the reason for its being should be brought out.

The question of homemade vs. ready-made clothing has not yet been fully solved but where any class has sufficient data to build on, a lesson could be planned which would teach many valuable facts.

For remodeled clothing, the best results would come from having large sketches of the original garment for comparison with the remodeled garment. The wearer of the remodeled garment, or whoever is giving the talk, should describe the original, giving date of purchase, cost, length of wear, method and cost of the preparation made for remodeling,

such as cleaning or dyeing, and the estimated value of the remodeled garment. There should be an attempt to attain as great variety as possible in the garments shown.

A Children's Style Show would be particularly appealing and would be an excellent way of interesting the mothers. Such a lesson might be arranged in connection with a Child Welfare Exhibit or class.

The choice of girls who are to wear the garments should be carefully made to bring out in each case exactly the desired points. Posture and walk should be emphasized and all details, such as what to do with the hands, should be taken care of so that nothing will detract from the desired effect. On the other hand artificiality or affectation should be avoided. Music during the appearance and exit of the model is an improvement. The physical training department will be of great assistance in training the girls for this.

The lecture or talk which accompanies the showing of garments should be thoroughly planned beforehand. The content of the talk will, of course, depend upon the particular phase which is being emphasized. The following is a suggested outline built upon the subject of suitable clothing:

House dresses: essential characteristics of a suitable house dress:

Must permit freedom of motion. Skirt, short and medium width; neck, low; sleeves, either short or made so that they can be easily and securely rolled up.

Must be easy to wash and iron. Color, fast to water and light; pattern, plain; trimmings—self trimmings, flat for ease in ironing.

Must be durable. Material—strong, to resist wear and frequent launderings; pockets, etc. arranged to lessen likelihood of tearing in wearing or laundering.

School or business dresses: essential characteristics of suitable school or business dresses:

Must be attractive and neat. Color, becoming, preferably dark; pattern, simple, good lines; trimming—very little, no trimming which cannot easily be kept fresh and clean.

Must be durable. Material strong, to stand constant wear.

Party dresses: essential characteristics of suitable party dresses:

Must be becoming. Color, light; material and style suited to age and personality of wearer.

Durability. Party dresses do not need to be particularly durable since they are given only occasional wear and almost any suitable material will wear as long as the dress remains in style. Inexpensive materials can often be used to advantage in party dresses because of this fact.

Shoes: essential characteristics of suitable shoes:

Must conform to the natural lines of the foot. Straight inside line; round toes; low, broad heel; flexible arch.

Must be in harmony with rest of costume. Kind of leather; color.

Stockings: essential characteristics of suitable stockings:

Must be durable; must not be too thin; must be of fiber in harmony with rest of costume; must fit well and be the right size for the foot.

The model may describe her own dress, or a second person may give the lecture. The latter plan is best in most cases. As each point is made it should be demonstrated if possible. Unbutton the long sleeves of the house dress and roll them up; unbutton the high collar and turn it down; have the model climb a few rounds of a step ladder or step up on a chair to display the suitable width of her skirt. Action makes the show interesting.

The planning of the lesson and its presentation may be entirely in the hands of the teacher or of the students. Even grade children could present such a lesson and would gain much from the responsibility entailed.

The lesson could be given toward the end of a course as a summary of what has been learned regarding clothing selection, or it could be given after certain phases of clothing selection have been taught. It is suitable for use with groups of any age. Seventh or eighth grade girls could conduct such a lesson. High school classes and college classes will be equally interested. It can be used with girls' garment making clubs, for farmers' week meetings, women's clubs, and county or state fairs. Every woman likes a style show and much very valuable information can be imparted in this way.

In any case, it is best to use garments actually constructed by the group interested, as well as borrowed garments. For this reason, such a lesson fits in well at the end of a course. If there are vocational or trade departments connected with the institution, the products of such classes should be used. Each girl can appear in her own costume, explaining her reasons for choice of material, pattern, and style.

By borrowing from local stores and by careful choice from all available sources, shoes, hats, and dress accessories can be included in the style show. Their use gives an excellent opportunity for teaching facts about their choice which ordinarily find no place in a clothing course.

FOR THE HOMEMAKER

A COÖPERATIVE NURSERY

MARGARET GOODRICH NORTON

One of the Mothers

The coöperative nursery at the University of Chicago was founded to meet a war-time emergency. Many of the faculty wives wished to do Red Cross work but could neither leave their small children at home nor afford to hire nurse maids. After discussing the matter several of the women, under the leadership of one especially interested, decided to ask the University for the use of a building that had formerly been the Women's Gymnasium and that had not been remodeled for other use since the completion of the new gymnasium. It was well adapted to the purpose, since it had several small rooms, a large main hall, and a field enclosed by a high brick wall. The University not only gave the use of the building, for the sake of helping the Red Cross work, but supplied also light, heat, and janitor service. A trained kindergartner was engaged to be at the nursery from 9 a.m. till 12, and 1.30 till 5 p.m. on five days a week, and the mothers enrolled in the enterprise were assigned a morning or afternoon every week to act as her assistants.

The nursery as thus organized for war work was found too valuable to dispense with after the war closed. It is now in its third year and has survived several crises, the most serious one being the taking over of the building to serve as a mess hall for the Student Army Training Corps. When it was returned to us, however, the University expressed its interest in the plan in the very tangible and welcome form of installing toilets, low wash bowls, a bubble fountain, and various improvements, such as fresh paint and other needed changes. This was done with the understanding that the use of the premises was to be restricted to children of parents connected in some way with the University.

We have an average attendance of seventeen in the morning. These are usually children under kindergarten age and we supply sand pile, slide, and swing for outdoor amusement, and kiddy-cars, clay, toys, and the like for indoor fun, with a piano for musical games. In the after-

noon the attendance is slightly larger and the children are those who were in kindergarten in the morning. These children have found their greatest happiness in building a real playhouse in the field with real boards and nails. Babies are brought at all hours. Our youngest was a constant attendant from the age of three months, while both parents were studying law at the University and the father took a degree. The babies have a small room with cribs or they are trundled out into the yard and remain in their carriages. We have now under consideration a separate place for these babies with a trained nurse in charge, as they are a great responsibility and it is difficult to protect the tots just creeping from the careless romping of the older children.

The attendance but not the membership is largely increased when the children can be conveyed back and forth from the homes. We tried to do this and it proved a very great help to the mothers living at a distance from the University. We found, however, that we could not finance the scheme and it was abandoned until one of the mothers offered her own automobile and her services in collecting and returning the children every morning. This she does for a very small fee.

We also tried the scheme of serving lunches to such children as wished to remain through the lunch hour. These children bring their own bread, butter, and other cold food and we bring over in a thermos contrivance hot vegetables and simple hot desserts from the nearby lunch room in Ida Noyes Hall. This venture required the assistance of so many more mothers that now lunches are served on only one day a week.

Several points in the successful management of such a nursery are obvious to those who have watched the enterprise from the beginning. First there must be a nucleus of enthusiastic and loyal women and they need a guaranteed financial backing until the enterprise is under way. Next, the situation must be centrally located. During the fall of the Student Army Training Corps our nursery practically suspended, since no such suitable place could be found. Then the dues must be very low as otherwise the mothers will not join. Ours are on a sliding scale of twenty-five cents to a dollar a week per family, most of the members paying fifty cents. When it is considered that for this price your children, no matter how many, can be competently guarded for over thirty hours a week it is obvious that it is the one cheap thing left in the world. With our membership of 46 these dues are sufficient to pay the salary of the kindergartner and leave a small margin for extra help,

games, cleaning supplies, or crackers. They are not sufficient to pay rent on a room and light and heat.

Surprising as it may seem our most serious difficulty is in persuading the assisting mothers to come regularly and promptly. It is absolutely essential that at least two adults, preferably three, be on duty constantly. In case of accident someone must go for help but the children cannot be left alone. And yet to our shame be it said that time and again the mothers are inexcusably late or do not appear at all.

Coöperation is the key-note of our nursery. Membership necessitates service on the mother's part. I take care of the children today so that thirty other mothers may have time free for other things. Tomorrow it is another's turn and I may have precious time for countless duties that can hardly be accomplished when little three year olds are asking "Why? why? why?" or baby one year olds are toddling and tumbling into harm.

WOMEN AND PRESENT DAY PRICES

MARY KOLL

University of Chicago

Attorney General Palmer's nation-wide appeal to women for support in restoring the country's economic equilibrium recalls a pointed anecdote apropos of "stepping down" related by an English lecturer at one time with us.

The case had to do with Jack and Jim. Jack knew exactly to the penny, or nearly so, how much money Jim earned in a week; he knew how much Jim had to pay for rent, for food, and for the upkeep of his five children. Jim knew the same of Jack. When Jim was wont to enjoy solid comfort in the bosom of the family, he sat in shirt sleeves, pipe in mouth, on a sprawling old chair before the kitchen fire. Jack knew this; Jack did the same and Jim was aware of it. However, when Jack and his family came to call on Jim and his family, the comfort of the kitchen stove was deserted and the family passed to the shivering domain of the parlor where they sat "straight-up" with the neighbors—

all of which led up to the point that each of us is struggling not so much to get on the step above as to convey to the world the impression that he is on the step above, and that if each of us stepped down just one step the struggles of economic life would be overcome, the only difficulty being, "who should be the first to step down."

We are well aware that patriotic principles were not alone responsible for the willingness to wear three-winter-old suits and four-season-back hats during the never-to-be-forgotten days of conservation. Many of us were glad enough to step down, to wrest ourselves free from the overpowering influence of the emulative and invidious (thanks to Veblen) aspects of the Standard of Living, and blithely to assign to the war our sudden force of character. It is precisely through exercising this type of force of will that the Attorney General contends that the women of the nation can lower the cost of consumption. It is the women who purchase 90 per cent of the food and wearing apparel consumed in America. If this most powerful class of consumers will unite in effort, their concerted resistance will demonstrate that the producer is insulting their patriotism and their knowledge of values through the styles and the prices that he endeavors to fix today. If this powerful group of consumers will as a group "step down," and will determine not to buy now, to refuse to sanction the overwhelming extravagance flaunted upon them, to demand through forbearance a return to the era of sound sense; and if they establish the dictum that the woman who continues to encourage the present program of the producer is the woman who does not care about the condition of the country, about other women, about the American home—if the American woman will do these things there may be a return to "plain living and high thinking," and there must be a reduction in prices. This cannot be done by legislature. Men and women must do it for themselves, voluntarily.

The problem is not so much a matter of dollars and cents as it is the matter of restoring peace, happiness, and contentment to the country at large.

EGG SUBSTITUTES

The Bureau of Chemistry, United States Department of Agriculture, after analyzing and making baking tests with most of the preparations which are claimed by manufacturers to do the work of eggs, state that:

Baking tests showed that, with the same recipe, cakes made with these so-called egg substitutes are inferior to cakes made with water in place of the substitute, are not nearly so good as cakes made with milk, and in no measure are comparable with cakes made with eggs. There is no doubt, say the specialists, that most of these products do not really resemble eggs, neither can they take the place of eggs in baking and cooking, and further they do not serve any purpose in baking and cooking which is not equally served by the ordinary products daily used in the household.

A distinction should be made by the consumer between dried egg preparations, dried egg powders and the like, which consist entirely or mainly of real eggs in powdered form, and the so-called egg substitutes which contain little or no egg in any form. Real egg powders, properly prepared, will answer most purposes of shell eggs in baking and cooking.

The statements of the Bureau of Chemistry in regard to composition and cost are in accord with those of the Food and Drug Bureau of Pennsylvania who last year analyzed more than forty egg substitutes and published the results in bulletin form.¹ The results of the analyses showed that one half or more than one half of every sample was starch of some kind. Some of the statements in the summary are as follows:

An egg of average size has a nutritive value of 75 calories. Three dozen eggs would have a total food value of 2700 calories. A mixture of the ingredients commonly used in these egg substitutes has a nutritive value of 100 calories for each ounce. Therefore, 4 ounces, the largest amount found in any one of the packages, would have a nutritive value of less than one-sixth that of the number of eggs it claims to replace. In most of them the ratio was less than this.

To replace any article of the daily dietary with a product costing, we will say, one-third as much, but having one-sixth or one-eighth of the nutritive value, is certainly not in the interests of the consumer nor a real blow at the high cost of living.

In some few of the products great stress is laid upon the fact that real egg is present. In several, the proportion of egg may reach 50 per cent, but

¹ *Bulletin of the Pennsylvania Department of Agriculture*, Harrisburg, Pa., Vol. 1, No. 7, June, 1918. General Bulletin No. 314. Egg Substitutes and So-Called Egg Savers.

these are rare indeed, and are appearing on the market only on account of the ruling of several of the Food Departments of other States, in which a product may not use the syllable "egg" in the title, unless the product actually contains at least 51 per cent of egg. Even in these few instances, when egg is present, the element of deception still persists, for the directions for use state that one teaspoonful of the powder will replace one egg in contradiction of the incontrovertible fact that the most concentrated form of dehydrated egg requires about four teaspoonfuls of the material to represent one egg. The coloring matter which is present, is another element of deception for which there can be no legitimate defense. Its purpose is to make the cooked or baked article possess an appearance of egg richness, which is not warranted by the composition.

As a class, these products are inimical to the welfare of the consuming public and a detriment to the trade in legitimate food substitutes, of which there are many of merit. If an economical housekeeper wants to save the cost of eggs and of egg substitutes as well, it may be done by taking 4 table-spoonfuls of milk and half a teaspoonful of cornstarch. This will be equivalent to a teaspoonful of a mixture of equal parts of dried milk and cornstarch, which are the essential ingredients of most of the brands on the market.

The practice of combining ingredients to be found in every household and, after giving the mixture a fancy name, selling it for many times its value, should be discouraged by every means possible. In many instances the package selling for 25 cents does not cost more than 5 or 6 cents to the manufacturer; hence the effort to introduce these preparations.

These conclusions are given:

First. The brightest light of publicity should be shed upon these products and the heaviest weight of official authority should be invoked to discourage their manufacture and sale.

Second. They afford an opportunity for unpatriotic profiteering, combined with the development of the art of camouflage to the point of perfection.

Third. Their names are deceptive; their composition in no wise resembles that of egg; the presence of color, in those where it is used, is a fraud and the claims as to replacing value are either deliberate misstatements or ambiguous phrases.

Finally. Egg substitutes serve no purpose that cannot be served just as satisfactorily and much more cheaply by articles in daily use in every household.

AFTER THE WAR—IN GERMANY

EXTRACTS FROM PRIVATE LETTERS OF AN AMERICAN WOMAN, RESIDENT
IN GERMANY FOR MANY YEARS AS THE WIFE
OF A GERMAN OFFICER

München,
November 28, 1919.

DEAR AUNT—

Winter set in early this year—on October 1—and we have had several snow storms and frost and extremely cold weather ever since. As a result we are burning all our carefully hoarded supply of peat and wood, which ought to have lasted all winter, and when this is used up I don't know what will happen to us. We all live in one room, the dining room, though the children do their home work in the adjoining room, which is half-heated by leaving the door open between. All the rest of the apartment is icy cold and I have gotten very painful chilblains from the cold floors. I think cold is much harder to stand than hunger, and I am used to both. We have more to eat now, but pay exorbitant prices for meat, flour, and other necessities, whereas the rations allowed by the authorities still exist in the same insufficient quantities we have had all during the war. Yesterday was Thanksgiving Day, the first year without a turkey and the first year I had absolutely no desire to celebrate. All the other past years my friends, Mrs. ———, Mrs. ——— and their husbands have met together with us for some sort of feast. I went to the short service at the American church in the morning, but all of those present had to "imagine" the turkey dinner afterwards. Most of us felt like crying. . . .

The currency is so low that a check for the smallest amount by being multiplied by 25 or 30, according as the exchange happens to be, will go a great way here, even if the prices are exorbitant. Since the embargo was raised, coffee, tea, cocoa, rice, etc., have appeared on the market, but at such prices that no one can buy much of these long-needed articles. I have not eaten bananas or oranges for years. We drank malt coffee all during the war; during the last year, until the embargo was raised this summer, tea was a great luxury seldom enjoyed. We have known all the deprivations and malnutrition of the Southerners during the Civil War. During that awful reign of terror in April, when the troops which came to the relief of Munich were shooting in the streets, and a battery of artillery was shot to pieces, several of the horses were killed by exploding shells. These were fallen upon and cut to pieces by the hungry mob who kept on till every eatable piece had been seized, in spite of dangerous shell fire! . . . B——— often was obliged to eat horse flesh during the last year of the war. He even sent us a supply frequently and the children ate it if it was stewed or made into

hash, but I preferred to go hungry those days. Horsemeat has a horrid, sweetish taste which I simply couldn't "stand for." At the beginning of the war there were 5000 dogs in Munich. There are 3000 less now, and I believe most of these were eaten in the form of sausages.

The worst of all is the lack of sugar, butter, or fat in every form, and milk. Families where there are no children can't get any milk at all; those with children under 10, only one pint per head; even nursing mothers do not get enough. Just try to drink malt coffee without milk, or bake without it, and see how things taste. Condensed milk is now for sale, but a 25 cent tin costs nearly \$2.00. You can imagine how much the poor can buy at that price. The worst deprivation for me was the lack of white bread. The black bread during the last 3 years was horrid, full of sawdust, potato, or turnips to stretch the rye or barley flour used, which I loathe even unadulterated. Well, we drink coffee now at \$3 a pound and tea and cocoa at \$5 a pound, but all our drink, either coffee or tea, has to be sweetened with saccharine as the sugar ration is barely enough for baking or sweetening apple sauce, puddings, etc. . . . We pay \$5 for a roast of any kind, \$5 for a small chicken, \$10 for a goose, and \$1.50 a pound for the commonest kind of fish. We plan to go out to ——— with the children and servants for the Christmas holidays, and may have to stay there all of January on account of the heating problem. The children say the schools are to be closed until February, for lack of coal. It will be quiet out there and healthful, and we have stoves in several of the rooms and plenty of wood to burn, as I had lots of the trees in the garden cut down last winter to make into fuel.

December 8, 1919.

We need badly decent shoestrings of all lengths, black and brown, but particularly black. For years we couldn't buy decent shoestrings and those now on the market are made of paper or other fibre, and burst after a few days' wear. Writing paper over here is so rotten that it can't be used. They have no decent finishing process and the ink runs on it. If you only knew all the things we have to do without and have done without these last years you would hardly believe it. . . .

My brother-in-law has had to go through another robbery—this time in his villa on Lake ———. Two gentlemen crooks appeared to the woman who kept the keys of his house which had been carefully locked up for the winter and explained they were his cousin returned from captivity in Persia and his servant and demanded the key to spend the night. They gave a most plausible story of having arranged with R——— to meet them there the next day. The woman opened the house for them, hunted everywhere for bedding which R——— had carefully hidden against just such an emergency. When the woman came back the next morning the thieves had departed

taking with them all the bedding, a wheel, a big photographic apparatus, very valuable, and all kinds of other instruments. The same day all our doormats were stolen in the entry to this apartment, and part of the carpet on the stairs. Hardly a week passes that some of our friends do not get robbed or lose some of their property in one way or another. The police seem powerless to prevent it or to catch the scamps afterwards. The "honest German" seems sometimes a relic of the past. If he isn't stealing he is busy smuggling in or out of Germany articles forbidden for trade, in the hope of helping the low state of the currency. Smuggling, bribery, stealing, and cheating are on the increase in spite of all the new laws to the contrary.

This six hour scheme of the working classes is a calamity, too, when the nation ought to work longer hours and harder than before, if it ever hopes to recover from the fearful waste and losses of the war.

A CHEERFUL COMPROMISE

"Life has its inevitable compromises. We cannot always be at our best. Take such a simple matter as that of masticating our food. Before I had given much thought to it, I should have said that it was something worth doing and worth doing well. When I learned that Mr. Gladstone was accustomed to chew each morsel of food thirty-two times, I thought it greatly to his credit. For a man who had so many other things to do, that seemed enough.

"But when I read a book of some three hundred pages containing the whole duty of man in regard to chewing, I was disheartened. Mr. Gladstone appeared to be a mere tyro guilty of bolting his food. "The author has found that one-fifth of the midway section of the garden young onion, sometimes called shallot, has required seven hundred and twenty-two mastications before disappearing through involuntary swallowing."

"The author evidently did his whole duty by that young onion, and yet I should have pardoned him if he had done something less. That doctrine of his about involuntary swallowing being the only kind that is morally justifiable, seems to me to be too austere. If we have to swallow in the end, why not show a cheerful willingness?"

—*Samuel McChord Crothers in "The Pardoner's Wallet," Houghton, Mifflin Company.*

EDITORIAL

A New Departure. An interested member* of the American Home Economics Association took the trouble to formulate a careful plan for the enlargement of the JOURNAL OF HOME ECONOMICS and to present it to the Council of the Association at Blue Ridge in the form of a typewritten statement of eight pages. It is impossible to carry out many of the valuable suggestions without a greater financial backing than is available at present. In response to one, however, we are beginning in the editorial section of this number a monthly review of the articles that have appeared in recent scientific periodicals. It is hoped that this may be of special service to those who wish to keep up to date in their teaching, but who have not adequate library facilities at their disposal, or perhaps the time to use them.

We are hoping that these reports may deal not only with food but with shelter and clothing and that they may include, not merely reports of research, but description of new types of apparatus that have been found of value, and other matters of immediate interest to the readers of the JOURNAL. Dr. Katharine Blunt and her associates at the University of Chicago have agreed to take charge of these summaries for the present year, though the material may often be prepared by others.

New Measurement of Metabolism. Studies of energy production have been made much easier and simpler since Benedict¹ published the account of his new portable respiration apparatus. The older methods for measuring energy metabolism, long used with brilliant success by Benedict and his coworkers in Boston and by DuBois and others at the Russell Sage Institute of Pathology, involve elaborate apparatus and require very specialized skill on the part of the experimenter, and often considerable time and patience from the subject experimented upon.

The new apparatus is less expensive and much easier of manipulation since it requires no gas analysis. In using it the subject breathes through a mouth-piece connected by a rubber tube to an enclosed volume of

* Mrs. Louise McDanell Browne.

¹ Benedict. *Boston Med. and Sur. Jour.*, 178, 667, 1918.

oxygen-rich air contained in a movable cylinder, or spirometer, while the carbon dioxide produced is absorbed in soda lime. The air in this closed circuit is kept moving by a small blower inside the apparatus, so that breathing is quite normal. To determine the volume of oxygen consumed, it is merely necessary to note the diminution of volume of air in the cylinder. The calories are calculated from this. In 15 minutes on a woman subject the oxygen consumption may vary around 3000 cc., so that observation periods as short as this give a very fair degree of accuracy. The carbon dioxide may also be determined by weighing the soda lime jar before and after an experiment, but as the jar is large and the weight of carbon dioxide small, the observation requires a special balance, and it is hardly necessary for calculation of calories. Carpenter,³ in a series of experiments comparing results on "untrained subjects" with this apparatus and others in the Nutrition Laboratory, draws favorable conclusions as to the accuracy of the new method.

The possible extent of the use of the apparatus both for teaching and research cannot be even suggested. We can now demonstrate to our students and have them find for themselves with vividness, many of the points in metabolism that we have heretofore been merely talking about. First, of course, are the questions of basal metabolism and its variation under different conditions. The hardship in this determination—coming to the laboratory without breakfast, lying absolutely quiet for a preliminary half hour rest and for the observation—is not enough to check research, and is good discipline for the budding dietetics teacher. Moreover, the New York workers⁴ report that a light breakfast of two pieces of bread and butter, a lump of sugar and 60 cc. of milk without coffee, has no effect on the basal metabolism after two hours, so that mid morning observations are feasible. Other questions for demonstration for investigation are the effect of food, of coffee, of exercise, of household tasks—anything that can be done with a subject lying, sitting, or standing attached to the mouth-piece of the apparatus.

Clinicians are making increasing use of determinations of basal metabolism in diagnosis of disease, especially hyperthyroidism,⁴ abnormal basal metabolism being probably the best indication of the presence of

³ Hendry, Carpenter, and Emmes. *Boston Med. and Sur. Jour.*, 181, 285 (Sept. 4), 1919; *ibid.* 334 (Sept. 11), 1919; *ibid.* 368 (Sept. 18), 1919.

⁴ Soderstrom, Barr, and DuBois. *Arch. Inter. Med.*, 221, 613, 1918.

⁴ McCaskey. *Jour. Amer. Med. Assoc.*, 73, 243 (July 26), 1919.

disturbed thyroid secretion, and such diagnosis is therefore made possible in many more cases by the simplicity of this new apparatus.

The Rôle of the Antineuritic Vitamine in the Artificial feeding of Infants. The artificial feeding of infants so far has been largely concerned with approximating the composition of human milk. To attain this, top milk is diluted and the energy value is made up by the addition of carbohydrate material, usually lactose. So long as milk was considered a valuable source of the antineuritic vitamine there was little need for considering the possible relationship between a deficiency in this growth promoting factor and nutritional disturbances in infancy, but recent work along this line raises the question of the effect of such dilution. Attention was drawn to the importance of this fact, because it developed that artificially fed infants required a greater energy value in the diet to equal the gain in weight of breast fed children. The suggestion was made that the excess food carried with it, by adsorption, the required supply of antineuritic vitamine.

The work of Dr. Amy Daniels and Miss Byfield⁶ at the Iowa Child Welfare Research Station was undertaken in order to study the value of various additions to the diet. Infants were selected from the Iowa clinic who were normal in every respect except that they were failing to gain in weight. For three periods of from 10 to 20 days each, they received an addition of vitamine-rich material with the regular bottle feedings. In the first, this was an extract of wheat embryo; in the second period, in order to study a more easily available source, it was an alcoholic extract of carrots, turnips, and celery; in the third, since the preparation of this extract is not feasible for routine feeding, a soup was made from the same vegetables. Growth was stimulated in all the subjects and all showed a similar gain in weight in spite of variable factors of age, calorie value, and different percentage composition of food.

The authors draw the conclusion that failure to gain in infants and young children may be the result of an insufficient amount of the antineuritic vitamine in the food, which should therefore be carefully scrutinized with this in mind.

Is Botulism a Present Danger? Numerous deaths from botulism have been reported on the Pacific Coast in the past three or four years

⁵ McCaskey. *N. Y. Med. Jour.*, 110, 607 (Oct. 11), 1919.

⁶ Daniels and Byfield. *Amer. Jour. Diseases Children*, Dec., 1919.

and recently this form of food poisoning has been recognized in several instances in other parts of the country, caused by ripe olives in Ohio and Detroit,¹ by home canned asparagus in Boise, Idaho,² and by cattle forage in Illinois.³ The increase in number of cases, whether real or apparent because of improvement in methods of diagnosis, raises the questions: where does *B. botulinis* occur, how generally is it distributed in nature, what are the possibilities of its presence in canned food, either home or factory product, what is the extent of our danger from this sort of poisoning?

The organism is possibly quite generally distributed through yard, garden, and orchard, as it has been found by Dr. G. S. Burke⁴ of Leland Stanford University, in such places as bruised and bird-pecked cherries, spotted bean leaves, insects from bean plants, hog manure. The material was collected from five widely separated localities in California. Earlier efforts (1912) by Van Ermengem to find the bacillus probably failed because of the difficulty of actually isolating it. Mrs. Burke made no especial attempt to isolate the organism but detected its presence by specific toxin formation. The method consisted essentially of injecting the filtrate from the unknown culture into guinea-pigs and watching for the characteristic botulism symptoms; the toxin was further identified with the specific anti-toxin prepared in her laboratory.

The organism *B. botulinis* was not found by Weinzirl⁵ in some 1018 samples of factory canned food examined in the laboratories of the Department of Preventive Medicine and Hygiene in Harvard Medical School. The finality of his results is questioned by Dr. Burke⁶ who states that failure actually to isolate the bacillus is not a true indication of its absence. The interesting controversy of these two investigators can be read in the *Journal of the American Medical Association*.^{6,7}

¹ General News. Bacillus Botulinis Poisoning in Detroit, *Jour. Amer. Med. Assoc.*, 73, 1373, 1919.

² Thom, Edmondson, and Giltner. Botulism from Canned Asparagus, *Jour. Amer. Med. Assoc.*, 73, 907, 1919.

³ Graham and Brueckner. Studies in Forage Poisoning, *Jour. Bacteriology*, 4, 1, 1919.

⁴ Burke. The Occurrence of Bacillus Botulinis in Nature, *Jour. Bacteriology*, 4, 541 (Sept.), 1919.

⁵ Weinzirl. The Bacteriology of Canned Foods, *Jour. Med. Research*, 39, 349, 1919.

⁶ Burke. Spoiled Canned Foods and Botulism, *Journ. Amer. Med. Assoc.*, 73, 1078, (Oct. 4), 1919.

⁷ Weinzirl. Spoiled Canned Foods and Botulism, *Jour. Amer. Med. Assoc.*, 73, 1789, (Dec. 6), 1919.

Because the offending food has been in many instances a home canned product⁸ considerable suspicion has been attached to fruits and vegetables so preserved. It is known now that some strains of *B. botulinis* can withstand even the temperatures at 5, 10, and 15 pounds pressure for 10 minutes.⁹ There is apparently some diversity in resistance to heat and cold among the different strains; Thom, Edmondson and Giltner³ found that the Boisé strain "can live and multiply in as low a temperature as 12°C.; therefore foods set away in the ice box are not free from danger if *B. botulinis* happens to be present. Fortunately, the toxins of the various strains seem to be rendered innocuous quite readily by heating to the boiling temperature."

The salient features of the measures of precautions advised by many writers seem to be: to reject any canned material which is at all suspicious of spoiling or putrefaction, not even tasting it; to use in canning only fresh, unbruised, sound vegetables and fruits; and then as a final safeguard, to heat all canned food to the boiling temperature to destroy any possible toxin. In many instances of botulism poisoning, the victims had suspected the condition of the material but proceeded to eat it nevertheless.

Our interest in botulism, far out of proportion to its incidence and importance as a cause of death, is due partly to the unusualness of the symptoms⁸ and partly to its relation to the whole question of the preservation of foods. We await with much interest further information concerning the mode of contamination of food products and of dissemination of the organism.

Sending American Home Economics Abroad. A very interesting plan has been laid before the officers of the American Home Economics Association. It is that they show their faith in their own science by sending it to the Near East. Our efficient agency for this work is on the spot, namely, the American College for Girls at Constantinople.

This interesting and unique College has been in existence for twenty years and has exerted an incalculable influence over the women of the Near East. It serves 18 nationalities, and sends into Greece, the Greek islands, Turkey, the shores of the Bosphorus and all the Balkan states educated women to become leaders of their people.

⁸ Dickson, Monograph 8, Rockefeller Inst., for Med. Research, 1918.

⁹ Burke. The Effect of Heat on the Spores of *B. botulinis*: Its Bearing on Home Canning Methods, Part I. *Jour. Amer. Med. Assoc.*, 72, 88, 1919.

These people live very differently from us and very empirically. The College now offers good courses in chemistry and biology which would be factors in a home economics curriculum.

After over seven years of war and the necessity for doing a great deal of relief work, the College is not in a position to introduce the home economics that the girls so terribly need. So they turn to America.

The suggestion is made by Miss Marlatt, of the University of Wisconsin, and warmly seconded by Miss White, President, by Mrs. Norton of the JOURNAL, and by many other officers of the Association, that we send out a first-class professor to Constantinople, who can organize an active department in the College. The Council of the Association will be asked to consider such a plan at the Cleveland meeting.

This seems a wonderful opportunity to make our home economics do service. Every girl who could be taught how to live and run a home would go either into a village where she would be the leading citizen and carry a great light with her, or into a city, where her candle, together with the candles of other alumnae of the College at Constantinople, would illuminate the town. Imagine sending into Turkish, Armenian, Greek, Servian, Albanian, Jewish, Bulgarian, and other Oriental homes lux ex Occidenta.

It would cost \$2000 a year to maintain a department of home economics at Constantinople, and we should wish to undertake it for three years. The money would pay \$1200 to a professor (who would also receive her living), together with her travelling expenses to and from America, and would supply a little departmental equipment.

The American Colleges at Constantinople, Beirut, and other points in Asia Minor are the hope of the Near East, and home economics workers will watch with great interest the plans for this contribution from their own field to a section of the world which education must win from anarchy and ignorance.

BENJAMIN R. ANDREWS.

As the Journal Goes to Press. A Bill (H. R. 12078) to amend the Smith-Hughes Vocational Educational Bill has just been introduced into the House of Representatives by Congressman Fess, chairman of the House Committee on Education. This amendment is substantially the bill that was given in tentative form in the June JOURNAL. It provides an appropriation of three million dollars for home economics, distributed among the states on the basis of population.

Now is the time to write to your representative and urge its passage.

PROGRAM OF THE AMERICAN HOME ECONOMICS ASSOCIATION

IN CONNECTION WITH THE DEPARTMENT OF SUPERINTENDENCE, N. E. A.

AUDITORIUM, EAGLE SCHOOL, CLEVELAND

MONDAY AFTERNOON, FEBRUARY 23

Methods in High Schools:

Leader—Edna N. White, President, A. H. E. A., and Professor of Home Economics, Ohio State University, Columbus, Ohio

- 1.30 The Problem Solving Method in Home Economics Teaching
Helen Goodspeed, State Supervisor of Home Economics, Madison, Wisconsin
- 2.30 Applied Economics in a One Year Home Economics High School Course
Rosa Biery, University of Chicago, Elementary and High Schools
- 3.30 General Discussion
- 6.30 Dinner

TUESDAY MORNING, FEBRUARY 24

Tests in Home Economics Teaching:

Leader—Adelaide Laura Van Duzer, Supervisor of Home Economics, Cleveland, Ohio

- 9.00 Tests as an Aid in the Teaching and Organization of Home Economics
Florence Williams, Supervisor of Industrial Arts, Richmond, Indiana
- 10.00 Standard Tests in Teaching Textiles and Clothing in High School
Mabel Trilling, Professor of Home Economics, University of Chicago
- 11.00 Teaching by the Meal Plan Method
Betsey Madison, Home Economics Department, University of Wisconsin

TUESDAY AFTERNOON, FEBRUARY 24

Child Feeding:

Leader—Lydia Roberts, Assistant Professor of Home Economics, University of Chicago, and temporarily with the Children's Bureau, Department of Labor, Washington, D. C.

- 1.30 Report on Field Work for Children's Bureau
Lydia Roberts
- 2.00 Feeding Clinic and Demonstration School
Mary A. Harper, Association for Improving the Condition of the Poor, New York City
- 3.00 Exhibits of Rats on Different Experimental Diets
Emma Francis, Battle Creek Sanitarium, Battle Creek, Mich.
- 3.45 General Discussion

Members of the Association should register, upon arrival, at N. E. A. headquarters in the Hotel Cleveland. Tickets for the dinner Monday should be purchased at that time. Arrangements should also be made for excursions Monday morning. The local committee will arrange for visits to elementary and junior and senior high schools, to Western Reserve University, to the Y. W. C. A., to factories serving lunches, and to hospitals. Communications in regard to reservations should be addressed to Miss Adelaide L. Van Duzer, Board of Education, Cleveland. It is important that advance reservations should be made.

BOOKS AND LITERATURE

American Marriage Laws in their Social Aspects: A Digest. By FRED S. HALL AND ELIZABETH W. BROOKE. New York: Russell Sage Foundation, 1919, pp. 132.

This compilation of the marriage laws is the second of a series of studies dealing with the problem of marital maladjustment as those problems come to the attention of the social case-worker. The first study, *Broken Homes*, by Miss Colcord, was reviewed in the November JOURNAL. These two will be followed by a study of the administration of the marriage laws of the various states.

The authors first summarize the recommendations for amendment to our marriage laws that have been put forward by four authorities—the Commissioners on Uniform State Laws, Professor George E. Howard in his monumental *Study of Matrimonial Institutions*, Miss Willystine Goodsell, author of *The Family as a Social and Educational Institution*, and Frank Gaylord Cook, author of a series of articles on the "Marriage Celebration" published in the *Atlantic Monthly* in 1888.

The plan followed by the authors is that of setting forth something in the nature of a standard and following this exposition first by a summary of the marriage laws of all the states and then by an analysis of the law of each state. The recommendations bear on the following subjects:

1. Common law marriages, which are still recognized in 26 states and should be everywhere abolished.

2. The marriageable age.

3. The notice of intent to marry, of importance as insuring greater deliberation on the part of the contracting parties and as giving opportunity for investigation by authorities or persons interested.

4. The marriage celebrant.

5. State registration.

6. Inter-state relations.

Acts proposed by the Commissioners on Uniform State Laws are either given in full or carefully summarized. The subject of the desirability of uniform legislation is discussed and the arguments for and against federal action as compared with action by the various states.

The editor, Miss Mary E. Richmond, expresses the hope that persons in possession of fairly exact knowledge concerning the administration of the marriage laws in the various communities may share their knowledge with her. (Address care of the Russell Sage Foundation, 130 E. 22nd Street, New York City.)

It is, of course, clear that if there is to be developed a national structure through which the national life is to function with a fair degree of freedom and satisfaction, national standards must be developed, national minima determined upon. It is highly important, then, that as rapidly as possible, in the various important fields of social organization, data be obtained from which the volume and character of the task of nationalizing the social life may be judged. Like so many other subjects originally left to the states, the organization of the family now appears as clearly of national rather than local concern. This study makes a contribution towards our thinking in national terms upon a fundamental problem.

This is an illustration of the national character of the problem of distress, for the families, whose marital difficulties often prove to be the critical question for a social agency which is trying to develop a plan for treatment, may have been the victim of conditions in this respect as in others far below those prevailing in the community

in which the agency and family are brought together; and burdens resulting from lack of intelligent social control in one place may fall on shoulders far removed from that jurisdiction. Social workers, then, should

be, with all interested in the development of a true American home, peculiarly concerned for the standardization on a national scale of this body of legislation.

S. P. BRECKINRIDGE.

PAMPHLETS RECEIVED

Issued by the U. S. Department of Labor, Children's Bureau,
Infant Mortality. Results of a Field Study in Saginaw, Mich. Nila F. Allen. Infant Mortality Series No. 9, Bureau Publication No. 52, 1919.

Maternity Benefit Systems in Certain Foreign Countries. Henry J. Harris. Legal Series No. 3, Bureau Publication No. 57, 1919.

Minimum Standards for Child Welfare. Adopted by the Washington and Regional Conferences on Child Welfare, 1919. Conference Series No. 2, Bureau Publication No. 62, 1919.

Save the Youngest. Seven Charts on Maternal and Infant Mortality, with explanatory comment. Children's Year Follow-up Series No. 2, Bureau Publication No. 61, 1919.

Seventh Annual Report of the Chief, Children's Bureau, to the Secretary of Labor. Fiscal year ended June 30, 1919.

Issued by the New York State College of Agriculture at Cornell University:

The Cornell Reading Course for the Home: Thrift Series—Lesson 128, Points in Selecting the Daily Food, Flora Rose; Lesson 129, Questions for Group Discussions on Thrift, Flora Rose; Lesson 130, Club Programs on Thrift.

Issued by the Indiana State Department of Public Instruction, Indianapolis, Indiana:

Homemaking Series: Care of the Family in Health. Care of the Family in Sickness. Care of the House. The Farm House. The Gift Season. Home Management. Hospitality. House Decoration. House Furnishing. How to Live. Selection of Clothing. Home Sewing. Problems in Hand Sewing. Making Use of our Food Supply. Table Service. Food Preservation.

Issued by the Ladies Home Journal, Philadelphia, Pa.: Written by Anna Barrows. Price 10 cents each.

Foods that Build the Body. What a Young Housewife should know about Buying and Cooking Meat and other Body-Building Foods; *Good Bread Making; Serving Fat in Food; Serving Minerals as Food; Serving Sweets as Food.*

Issued by the Bureau of Applied Economics, Inc., Washington, D. C.

Changes in Cost of Living, 1914-1919, A Summary of Existing Data.

Standards of Living, A Compilation of Budgetary Studies.

Wages in Various Industries. A Summary of Wage Movements during the War.

Issued by the National Kitchens Division of the Ministry of Food, London:

Handbook of National Kitchens and Restaurants.

Good Food at Less Cost, Spencer Leigh Hughes, M.P.

A Great Public Work. Mrs. F. L. Turner.

Thoughts on National Kitchens, Arnold Bennett.

BIBLIOGRAPHY OF HOME ECONOMICS

PERIODICAL LITERATURE

HOUSE CONSTRUCTION AND FURNISHINGS

- Floors and Flaws in your Kitchen. Ethel R. Peyser, *House and Garden*, October, 1919.
- Experiences in Teaching Household Decoration. Harriet Day, *Indus. Arts*, October, 1919.
- Italian Furniture. Leslie G. Martin, *Indus. Arts*, October, 1919.
- Colonial Portraits as Decoration in Modern Homes. Peyton Boswell, *House and Garden*, October, 1919.
- Methods of Heating a House. F. C. Brown, *House and Garden*, October, 1919.
- What to Know About Furniture. Matlack Price, *House and Garden*, October, 1919.
- How to Make Your Curtains. Agnes Foster Wright, *House and Garden*, October, 1919.
- Shrinkage of Interior Trim: Its Cause and Prevention. L. V. Teesdale, *Amer. Architect*, pp. 143-145, figs. 5.

CLOTHING AND DESIGN

- Embroidery Designs for Simple Stitches. *Le Costume Royal*, October, 1919.
- The Girdle in Some of Its Forms Throughout Past Centuries. *Le Costume Royal*, October, 1919.
- The Amateur Dressmaker. *Elite*, December, 1919.
- Old Clothes as New Fashions. Catharine Ogleby, *Fashion Review*, November, 1919.
- Evolution. Historical Development of Skirts. *Le Costume Royal*, November, 1919.
- Dress Trimmings—English History. *Le Costume Royal*, December 1919.
- Democracy and Art. Gutzon Borghun, *Arts and Decor.*, October, 1919.
- Simplicity and Design. Pedro Lemas, *School Arts*, November, 1919.
- Creative Textile Art and the American Museum. M. D. C. Crawford, *Amer. Museum Jour.*, 17 (1917) No. 4, pp. 253-259, figs. 20. An article with illustrations describing the use of pre-Columbian and American motives and similar sources for modern textile designs.
- Pine Needle Basketry. Edward F. Worst, *Indus. Arts.*, October, 1919.

MISCELLANEOUS

- Administration of a Men's Club. J. W. Wood, *Hotel Mo.*, 27, (1919), No. 318, pp. 77, 78, Many suggestions regarding management, cost, food problems, and similar topics are made in this article, presented at the annual conference of the Institution Economics Section, American Home Economics Association, at the University of Wisconsin, Madison, in June, 1919.
- The Invention and Spread of Agriculture in America. H. J. Spinden, *Amer. Museum Jour.*, 17 (1917), No. 3, pp. 180-188, figs. 8. Information is given regarding the use of corn, peanuts, squashes, and other American foods of prehistoric times. The article is preceded by a list of food plants, medicines, fibres, gums, and domestic animals, for which the world today is indebted to the aboriginal inhabitants of America.
- The conservation of Our Food Supplies in WarTime. T. G. Hull, *Amer. Museum Jour.*, 17, (1917), No. 5, pp. 295-298, figs. 3. An account of the war-time exhibit installed at the American Museum of Natural History.
- Wild Mushrooms as Food. W. A. Murrill, *Amer. Museum Jour.*, 17 (1917), No. 5, pp. 322-331, figs. 14. An illustrated article describing edible mushrooms and giving suggestions

as to their cookery. Information is also given regarding the poisonous species which must be avoided.

The Anay, a New Edible-fruited Relative of the Avocado. S. F. Blake, *Jour. Wash. Acad. Sci.*, 9 (1919), No. 16, pp. 457-462, fig. 1. This paper reports the discovery in Central America of an edible fruit related to the avocado, for which the native name "anay" is retained. A full botanical description is given, together with other information. It is stated that the fruit is oily and in general resembles the avocado, but in addition has a slightly sweetish taste.

Ostrich Farming in South America. J. E. Duerden, *Amer. Museum Jour.*, 17 (1917), No. 6, pp. 366-375, figs. 12. This article contains much interesting information about ostrich feathers and plumes.

Discoveries at the Aztec Ruin. E. H. Morris, *Amer. Museum Jour.*, 17 (1917), No. 3, pp. 168-179, figs. 14. Data regarding prehistoric Pueblo architecture in the Southwest, and pottery, household utensils, and clothing, are given.

Explorations in New Mexico. E. H. Morris, *Amer. Museum Jour.*, 17 (1917), 7, pp. 461-471, figs. 9. Interesting information on pottery, etc., and similar topics are included.

The Yellowing of Paper. A. B. Hitchens, *Sci. Amer. Sup.*, 87 (1919), No. 2257, p. 222, figs. 3. Experimental work here discussed led to the conclusion that "the sheet from which the sizing had been removed did not discolor greatly, but did not hold up as well as those which had never been sized at all. The rosin size, even if it is present in the paper only for a short time, undoubtedly has some influence upon the fibers and produces a certain amount of yellowing with time.

"Where it is necessary that a paper retain its original color, it is obviously important to use as little rosin size as possible, consistent with the degree of sizing required, and to use always an iron-free aluminum sulphate as the precipitant. The animal sizing should be omitted or kept as low as possible."

Effect of Number of Coats on the Moisture Resistance of Spar Varnish. *Technical Notes, U. S. Forest Service* (Madison, Wis.), No. F-12.

Some References to Literature on Manufacture and Testing of Animal Glues. *Technical Notes, U. S. Forest Service* (Madison, Wis.), No. F-7.

Bibliography on Casein and Casein Glues (Books on Chemistry of Casein) and (Articles on Manufacture and Use of Casein). *Technical Notes, U. S. Forest Service* (Madison, Wis.) No. F-6.

Water Resistant Glues. *Technical Notes, U. S. Forest Service* (Madison, Wis.), No. F-4.

Scratched Joints Versus Smooth Joints in Gluing. *Technical Notes, U. S. Forest Service* (Madison, Wis.), No. F-5.

Setting Blood Albumin Glue in a Kiln. *Technical Notes, U. S. Forest Service* (Madison, Wis.), No. F-19.

On the Bacterial Efficiency of Soap Solutions in Power Laundry. H. G. Elledge and W. E. McBride, *Amer. Jour. Pub. Health*, 8 (1918), No. 7, pp. 494-498. Experimental work is reported. Sterilization is obtained when garments are finished by ironing or by drying at high temperatures. In the case of those not so treated the washing with soap produces a bactericidal efficiency comparable to that obtained by pasteurization.

Carpets Washed and Scoured on the Floor. *Hotel Mo.*, 27 (1919), No. 318, p. 50.

China for dual use—cooking and serving. *Hotel Mo.*, 27 (1919), No. 318, p. 52.

Solving the floor scrubbing problems. *Hotel Mo.*, 27 (1919), No. 318, p. 52.

Washing and ironing machines for small hotels. *Hotel Mo.*, 27 (1919), No. 318, p. 52.

A unit suitable for small laundry equipment installation is described.

Teaching Health in the Schools. L. Emmett Holt, *Mo. Bull.*, N. Y. State Dept. Health, July, 1919.

NEWS FROM THE FIELD

The Vocational Homemaking Section of the National Society for Vocational Education offers the following program for its meetings at Hotel La Salle, Chicago, February 19 and 20.

Thursday Morning, 9 A. M.

Vocational Homemaking Education
Chairman, Isabel Ely Lord, Director School of Household Science and Arts, Pratt Institute, Brooklyn, N. Y.

1. Effect of the Smith-Hughes Law on Instruction in Home Economics
Report of Special Committee of the Vocational Education Association of the Middle West: A—Full Time Schools, Cora I. Davis, State Supervisor of Home Economics Education, Illinois. B—Teacher Training, Louise Stanley, Head of Department of Home Economics, University of Missouri. C—Part-Time and Evening Schools.
2. In Training Teachers of Vocational Homemaking, how shall we meet the requirement of practical experience?
Report of Special Committee of the National Society for Vocational Education, Maud Murchie, State Supervisor of Home Economics, California.
3. Standards of Accomplishment
Report of Special Committee, Anna M. Cooley, Associate Professor of Household Arts Education, Teachers College, New York City.

Friday Morning, 9 A. M.

Vocational Homemaking Education
Chairman, Maud I. Murchie

1. Home Project Work in Vocational Homemaking
Report of Special Committee, Louisa A. Pryor, State Board of Education, Massachusetts.
2. Methods of Household Accounting in the form of an exhibit, Sarah McLeod, Society for Savings, Cleveland.

The sessions when the industrial education of women is discussed will also interest home economics teachers. There will be a large home economics representation, as the Federal Board has called in the Smith-Hughes workers for a conference just before the National Society meeting.

The Ohio Home Economics Association will hold its annual meeting in the auditorium of the Eagle School, Cleveland, February 25 (the day following the meeting of the A. H. E. A.).

The afternoon program will be as follows:

A Forward Look in Home Economics, Sarah Louise Arnold, Dean of Simmons College, Boston, Mass.; The Reorganization of Home Economics Instruction, Mrs. Henrietta W. Calvin, Specialist in Home Economics, Bureau of Education, Washington, D. C.; The Nutrition Class for Children as a New Field for the Teacher of Home Economics, Mrs. Ira Couch Wood, Director Elizabeth McCormick Memorial Fund, Chicago, Ill.; The Relation of the Home Economics Teacher to the Health of the Community, Dr. E. A. Peterson, Director Department of Health Service, American Red Cross, Washington, D. C.

The morning will be given to visiting schools and other places of interest to home economics teachers. It is hoped that those who come to the A. H. E. A. meeting may be able to stay over.

The Meeting of the Home Economics Division of the American Association of Agricultural Colleges and Experiment Stations has become so important an event in the home economics world that many have thought it to be a session of the American Home Economics Association. A few years ago this section was only a small informal gathering holding a single session at the meeting of the Agricultural College

Association. At the meeting in November, 1919, it offered a full program for two afternoons and served as a meeting place for a large number of home economics people. Agnes Harris of Texas was chairman of the section, and Inga M. K. Allison of Colorado, secretary.

The first speaker, Abby Marlatt of the University of Wisconsin, read an able paper on the Unification of Subject Matter in Teacher Training Courses in Vocational Home Economics, Extension Work, and Research. Beginning with a brief review of the aim, methods, and subject matter used in teaching home economics as a basis for discussion, she made a keen analysis of the failures in many departments of the work, and gave suggestions for remedies. The next speaker, Bertha Terrill, of the University of Vermont, gave, in delightful English, a vigorous defense of The General Course in Home Economics for the undergraduate college student. Mildred Weigley, in her paper on Vocational Experience, asked the pertinent questions, What does vocational experience mean? How are we to know whether the vocational experience demanded of our students is adequate? At what point in the course should vocational experience be required? These must be answered by a careful analysis of our present curricula and courses. Edna White, president of the A. H. E. A., presented The Legislative Program of the Association, and Isabel Bevier reported as the chairman of the committee on plans and policies of the home economics section.

The first paper on Thursday was by Alice Loomis of the University of Nebraska, who spoke upon The Relationship of the Training of Teachers of Home Economics in Agricultural Colleges to the State Supervision of Home Economics under the Vocational Acts. She recommended a further coöperation between the state supervisor and the teacher trainer. Dr. Edwin O. Jordan of the University of Chicago spoke upon Food-Borne Infections, giving the latest results of the study of botulism and other food infections. Dr. Blunt of the University of Chicago pre-

sented a paper on The Present Status of Vitamines that was published in the January JOURNAL. Dr. Minna Denton gave a most interesting extract of a report on the Absorption of Fat by a Dough or Batter when Fried in Deep Fat. The full paper will be published soon in the JOURNAL. Margaret Sawyer gave a review of the work of the Red Cross in supplying dietitians, and outlined the Plans for Public Health Dietetic Work. Florence Ward of the States Relations Service gave a report of The Accomplishment of Home Demonstration Agents of the North and West.

The officers chosen for the coming year were Abby L. Marlatt, chairman, and Mildred Weigley, secretary.

The JOURNAL made a request that it be allowed to print as many of these papers as possible.

The Home Economics Section of the Central Association of Science and Mathematics Teachers met at the Lake View High School, Chicago, in connection with the whole society, on the Friday and Saturday after Thanksgiving. The first session was devoted to reports from the "Committee on Reconstruction"—a procedure followed in all the sections. Mabel Trilling of the University of Chicago, chairman of the committee, outlined the work of the home economics committee and its relation to the educational research committee of the A. H. E. A. of which she is also chairman. Helen C. Goodspeed, State Supervisor of Home Economics, gave a report for Wisconsin; Florence Williams, Supervisor of Industrial Arts, Richmond, Ind., discussed Tests as an Aid in Formulating the Course of Study, and Rosa Biery of the University of Chicago Elementary and High Schools, in a paper on Economics in the Home Economics Course, described the work which she does with her high school seniors.

The next morning, Minnie L. Volk, South High School, Columbus, Ohio, opened the meeting with an interesting and stimulating paper on Correlation of Art and

Household Art. Following her came Emma Francis of the Battle Creek Sanitarium, who meantime had been lent to the Biology Section, with her exhibit of rats on different experimental diets. She showed them in pairs or groups, pointing out, for instance, the marked difference in size and vigor between rats held for as short a time as 3 weeks, on a diet with or without milk—striking material for teaching the value of milk to mothers and children. A satisfactory sequel to the rat discussion was the paper by Mary E. Freeman, an elementary school teacher in the Chicago Public Schools, on *Malnutrition in Children and What the School Can Do to Overcome It*—an account of her own encouraging work to improve the health of her sixth grade through teaching better health habits in general and especially food. Of her 49 pupils she found that 30 drank coffee for breakfast and only 15 had milk; but after a month of the class discussion the coffee number had dropped to 19 and the milk risen to 26.

The officers elected for next year are: chairman, Miss Harriet Glendon, Lewis Institute; vice-chairman, Miss Treva Kauffman, Ohio State University; secretary, Miss Maude Firth, Supervisor of Home Economics, Davenport, Iowa.

Will Some County Agent Reply? A writer in the *Atlantic Monthly* says: "What is the Government doing for us? Setting the price on wheat and sending us county agents to tell our husbands how to kill jack-rabbits, and women county agents to tell us farm women how to make a dress out of our flour sacks. That latter was all right during the war, but I wonder if that

county agent didn't find out that we farm women, long before the war, were compelled to use our flour sacks for underwear because the middleman was buying silk underwear for his wife?"—*Annie Pike Greenwood, in "Letters from a Sage-brush Farm."*

A Lunch Room Management Course was introduced at Purdue University last year as an experiment. It proved successful and will be extended this year. New equipment is being added, thus incurring a debt which gives a real problem of the kind that every beginner in lunch room work must meet. Next year the course will be expanded into a cafeteria in the New Woman's Building where the general public will be served.

Two lunches are served each week, averaging forty-five servings in each. Two managers work out every detail of the lunch, plan the menu, order the supplies, keep an accurate itemized account, advertise their menu, prepare the main dishes, keep paid help employed with routine work to good advantage (a problem that everyone who takes up lunch room work must meet), direct the three girls from the class appointed as helpers for the morning work, and manage the serving. The three helpers assist only during the day that the lunch is served.

Last year the course proved a financial success, for the class was able to buy silver, dishes, and a tea wagon. This year we are starting out with a deficit of \$93.00 for aluminum trays, and later another one will be added when more silver and dishes are purchased.

OMICRON NU¹

UNA VERMILLION

National Editor

Our organization is unfortunately somewhat late in utilizing our space in the JOURNAL. It will require effort and coöperation on the part of each individual member, alumnae included, to make these pages a success. Should any of our members—whether active or not—ever feel that they have something worth while to contribute to our undertaking they will find that any and all contributions or suggestions will be heartily appreciated.

The present national officers of our organization, elected last spring at the fourth annual Conclave of the Grand Council of the Omicron Nu Society, are as follows: President, Marion S. Van Liew (Beta); Vice President, Hazel Manning (Eta); Secretary, Emily Hamilton (Beta); Treasurer, Marjory Williams (Alpha); Editor, Una Vermillion (Iota).

Lambda chapter was installed at the Oregon Agricultural College, Corvallis, Oregon, on May 30, 1919. Mrs. H. J. Gramlick of Lincoln, Nebraska, was the installing officer.

Dean Ava. B. Milam, A. Grace Johnson, and Hatty R. Dahlberg were elected faculty members. Helen Lee Davis and Mary Van Kirk, were transferred from Zeta chapter at Lincoln, Nebraska.

Nineteen student members were elected, four from the junior class to hold the organization together and carry it over to the following year. This fall eight new members were elected from the present senior class. The officers are Helen C. Gardner, president; Ruth Kennedy, vice-president; Hazel Kesley, secretary; Marie Mendenhall, treasurer; and Ruth E. Peaslee, editor.

Helen C. Gardner was sent as delegate from this chapter to the national conclave held at Albany, New York, June 18–21, 1919.

A Letter Directory for Omicron Nu. Last spring the Omicron Nu at Purdue University decided to send out a Letter Directory to every Omicron Nu member, both alumnae and active. This brief Directory contained the names of all the members, their addresses, and an article concerning their work. Our chapter was also discussed, stressing the work that the girls had done during the year. A card was inserted for each member to return, giving a full account of her work, in order to secure material for a more detailed directory next spring.

¹ Omicron Nu is the honorary home economics sorority. The first chapter was formed at Michigan Agricultural College in 1912.

THE Journal of Home Economics

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No. 3

WHAT WE HAVE LEARNED IN DIETETICS FROM THE ARMY¹

JOHN R. MURLIN

*Director of the Department of Vital Economics, University of Rochester; Late Director of the
Division of Food and Nutrition, Medical Department, U. S. Army*

The Division of Food and Nutrition in the Medical Department of the Army was formed for the purpose of safeguarding the nutrition of the soldiers. In every previous war, the army has been subjected to some form of nutritional privation. In the Revolutionary War there really was not enough food to go around. In the war of 1812 the army was plagued with a contractor system for supplying the provisions, which placed a great premium on dishonesty. As a consequence, the army suffered greatly from want of enough food, and, because of ignorance of dietetics, or, more properly, the science of nutrition, the food which it did get was not varied enough or fresh enough to insure good health. Scurvy was very common. Calhoun, as Secretary of War, adopting the suggestions of the first Surgeon-General, corrected these defects to a large extent in 1818.

In the Mexican War the army was able to live largely upon the country in which it was operating, and the abundance of fruit and wine prevented scurvy; but the sanitary care of foods, as well as of the camps in general, was very poor, and much dysentery resulted.

In the Civil War the Medical Department for the first time was charged with a share of the responsibility for the proper feeding of troops. But this authority was not conferred until 1863. Previous to that time,

¹ Presented at the Second Annual Convention of the American Dietetic Association, Cincinnati, September, 1919. Also printed in the *Modern Hospital*, January, 1920.

especially in the Peninsular Campaign, there was much scurvy and sickness of other sorts resulting from improper food. Surgeon John Letterman, Medical Director of the Army of the Potomac, upon his appointment, immediately took measures to correct the deficiencies of the ration. He was one of the greatest sanitarians the army ever had and ranks with Lowell, the first Surgeon-General, and our own beloved General Gorgas.

Finally, the Spanish-American War, which brought Gorgas his opportunity to study the transmission of disease by mosquitoes, was characterized, as many of us remember well, by the "embalmed beef" scandal. Looking back upon the tiny little war of '98, we see now what a tempest in a teapot it was. There really were few cases of serious poisoning by improperly processed canned meats; but in all probability the so-called canned "roast" beef, used in the travel ration as a substitute for canned corned beef, was responsible for much diarrhoea and consequently contributed to the lack of resistance to typhoid which was the real curse of that war. The chief difficulty lay in sending to the semi-tropical climate of Florida and Cuba canned stuff which had been processed for northern climates. Much of the meat spoiled and smelled badly and made a pestilential scandal for itself and for that part of the press which loves to handle putrescent news. What was really learned by this unpleasant experience in 1898 was the need of adequate inspection of foods, not only when they are purchased by the Supply Department, but also at the mess before they are used by the cook.

To avoid the mistakes of the Spanish-American War, as well as of the Civil War—to go no further back—General Gorgas organized in his department this Division of Food and Nutrition, which should make frequent inspections of food conditions in the camps and in the field, should seek to improve the cooking and serving of the food, and should study constantly the suitability of the ration.

What we have learned about army dietetics may be summarized briefly as follows:

- (1) We know now for the first time, not only the average requirement of food by the soldier in training, but also the range of this requirement.²
- (2) We know about how much the soldier eats outside the mess and that he will eat it no matter how good the mess may be.²

² Cf. Murlin and Hildebrandt: Average Food Consumption in the training camps of the U. S. Army. *Amer. Jour. Physiol.*, Sept., 1919, p. 531.

(3) The average daily consumption of each food so that an average dietary or ration built upon exact information can now be written.³

(4) The average composition of the food actually eaten in the mess.³

(5) The variation in food consumption in different seasons of the year.³

(6) The surprising variations in food consumption in different company messes of the same regiment doing identically the same physical work, the variation depending, apparently, upon the psychology of the mess rather than upon the physiology thereof. Likewise a surprising variation in the amount consumed by the same company from week to week, the external factors, such as temperature and work, remaining essentially the same.³

(7) The average consumption by different classes of patients in the army hospitals.⁴

(8) The preponderance of acid ash in the ration, as prescribed and as actually eaten, with the accompanying danger, in combination with excessive muscular fatigue, of an accumulative acidosis.⁵

(9) The surprising fact that a corrective diet prescribed by the hospital surgeon has nearly always a basic ash.⁵

(10) And finally, a possible relationship between diet and susceptibility to infection, which must be studied further.⁵

The garrison ration of the army in force when this war began was an excessive one. The basal portion of it, 18 ounces of bread and 20 ounces of beef, dates from 1794, when the only other component with energy value was whiskey. In 1818 one-half pint of beans was added, and whiskey was changed to molasses for making spruce beer. In 1832, liquors were eliminated entirely and coffee and sugar were substituted. In 1861, a pound of potatoes was added and beans were reduced. In 1898, tomatoes were added—none of the other components being reduced; in 1901, prunes; in 1908, jam, evaporated milk, butter, and lard. I have not mentioned the seasoning materials, salt, pepper, and extracts. Salt and vinegar have been present from the beginning; pepper since 1864, and extracts since 1908.

It should not be understood that the soldier in the late war has eaten all of this, although like a good sport he has tried. The ration is, and

³ Howe, Mason, and Dinsmore: Variation in Strength and in the Consumption of Food by Recruits and Seasoned Troops. *Ibid.*, p. 557.

⁴ Hoskins: American Military Hospital Dietaries. *Ibid.*, p. 578.

⁵ Blatherwick: Note on the Acid-Base Balance of Army Rations. *Ibid.*, p. 567.

should be, liberal, partly to offset excusable inefficiency in hasty mobilization and unavoidable wastes. You cannot make cooks over night, especially out of male Americans. The school for bakers and cooks in the army has succeeded in making them, and some very good ones too, in two months.

But no man can eat the entire American army ration day in and day out. The average amount of meat of all kinds actually eaten in the training camps in this country was 13.5 ounces instead of 20 ounces as provided by the ration; 7 ounces of bread instead of 18; 13 ounces of potatoes instead of 16. But with free choice of foods such as they had in the camps, the average soldier ate more beans, more fruit, more milk, more butter, drank more coffee and seasoned it with more sugar than the ration prescribes. Therefore the ration should be revised in these directions. This could have been done a year and a half ago with a saving of 3 cents a day for each soldier—amounting to an enormous sum of money for an army of 4,000,000 men in a very short time. Instead of revising the ration, however, the General Staff saw fit to withdraw the privilege of "savings," as it was called,—by which whatever remained of the money allowance to which an organization was entitled, was paid in money and could be spent for such extra things as the mess sergeant might select,—and now requires all purchases to be made by the Quartermaster upon requisition. This has worked a considerable hardship upon the hospitals, for it has made more difficult the selection of suitable foods for particular cases.

Notwithstanding some abuses of the savings system, however, the ration system in vogue has, under close inspection and supervision, worked well,—much better than in any previous war. The men have, except in very emergent circumstances exigent upon their military duties, always had enough to eat and of such quality that no cases of deficiency disease have been reported, and, with almost negligible exception, no cases of other disease in any way traceable to the food.

RECENT WORK OF THE COMMITTEE ON THE STANDARDIZATION OF TEXTILES

So general an interest has been manifested by home economics women in the progress of the Committee on the Standardization of Textile Fabrics, and so much coöperation and encouragement has been given us, that we gladly accept the editor's offer of space for a brief chronicle of our work up to date, although by the first of March we shall be a whole month older and shall have added another chapter to our history.

The Committee on the Standardization of Textile Fabrics was appointed by the Textile Section at the Annual Meeting of the American Home Economics Association last June, and started in life with excellent resolutions and the backing of the entire Association.¹ To the six original members of the Committee have been added Elizabeth Weirick, director of the Sears, Roebuck textile testing laboratory, and Marie Sellers, household editor of the *Pictorial Review Magazine*. There is an Advisory Committee numbering nearly forty and representing twenty States. Advisory Committee members are carrying on the Study of Purchasing Habits outlined below; bringing the committee program before state home economics associations, state federations of women's clubs, and organizations of consumers generally; carrying on laboratory tests; securing samples for wearing tests; giving us educational publicity; and holding up the hands of the Central Committee in other ways too numerous to mention. Every member of the two committees is a worker, and each has had or will have an important share in the sum total of the Committee's activities.

The first happening of major importance was a conference in New York on October 10 and 11, 1919, attended by seven members of the Central Committee. The object of this meeting was to hear from representative textile manufacturers, retailers, and others some of the difficulties that were sure to beset our way. We hoped also to get constructive suggestions. There were present two silk manufacturers, a cotton manufacturer, a consulting expert in silk manufacture who was experienced in woolen manufacture, a famous textile chemist, and a man in close touch with large retail interests in a number of leading cities. We also met the secretary of the Retail Dry Goods Association of New York City. At this meeting skepticism on the part of the trade

¹ See "Some Suggestions from the Textile Section" in the JOURNAL for September, 1919.

representatives gradually changed to interest, and much valuable information was received.

The Committee came to agree with the manufacturers that in all probability the constructive way to deal with the question of standards was to propose minimum standards based on manufacturing specifications and on wearing and laboratory tests, and to mark fabrics that met or surpassed these standards so that they could be recognized by consumer and salesperson, rather than to develop and push a few fabrics precisely meeting a proposed standard and, in so doing, ignore or deny recognition to fabrics that more than met the standard. Our conferees pointed out very sensibly that this latter course would tend to prevent the support of the very class of manufacturers and dealers on whom we were counting for coöperation.

We therefore register our conversion, on October 10, 1919, to the doctrine of minimum standards.

We wish to make plain, as we had to make plain again and again in the conference, that, in proposing a movement for the adoption of minimum standards of quality for textile fabrics, we are not proposing to destroy or diminish the value of the individual trademark or necessarily to reduce the number of different fabrics on the market. We are aiming to provide for the intelligent consumer, who desires or is obliged to spend her money to the best advantage, a sort of clothing insurance, assurance if you please, that will enable her, without previous training in textiles, to pick out materials sure to give real service for a definite use, and thus guard her from loss of money and material that she can ill afford. Conditions in the textile market to-day make the need for such protection and guidance greater than ever before. We believe that these same conditions have laid a strong basis for support of such a movement by thoughtful consumers.

We are quoting from our earlier article¹ when we say that such a movement cannot be fully developed in a day or a year, nor by radical or destructive methods. It cannot be developed at all except by the intelligent and sympathetic understanding and coöperation of all parties concerned—the manufacturer, the jobber, the garment maker, and the retailer, as well as the consumer. It should in time be possible to secure such coöperation because standardization, like other forms of insurance, will be of mutual benefit to the consumer, the seller, and the producer.

Following this conference the Committee formulated the following list of problems to be grappled with:—lack of laws protecting the consumer of textiles and clothing from misrepresentation; ignorance or indifference of a large proportion of women and girls to clothing problems so that yard goods and ready-made clothing are selected largely on the basis of surface finish, color, and cut, and there is extravagant expenditure for dress; lack of data on which to base suggestions for minimum standards; need for determining the most effective way of identifying fabrics that reach or pass the minimum standard; indifference and possible antagonism of the trade.

In December and January the Committee sent out to Advisory Committee members, and certain others, mimeographed copies of its Position and Program,² which served the several purposes of crystallizing our convictions and plans, placing us on record before the world, and unifying the preaching of apostles in divers places. It is upon this program that the following paragraphs are based, and we bespeak the assistance of consumers in general and home economics people in particular in carrying it forward as promptly as may be. A brief report of progress to date is included under each section.

Passage of protective legislation. The Committee is urging active support of the Barkley Misbranding Bill, H. R. 2855, 66th Congress. This bill penalizes the misbranding of merchandise of all kinds, including textiles among others. The reason the passage of this bill is so vital to the work of the Committee is that at present there exist widespread practices of misrepresentation in all branches of the textile trade, entirely unchecked by law. There would be little to prevent unscrupulous persons from putting on the market goods purporting to meet any standard the Committee might set. This would be especially true of fabrics made up into ready-to-wear garments, and at our conference we heard with surprise that by far the greater proportion of fabrics that leave the manufacturer find their way into the hands of the cutting up trade.

The Committee has secured the endorsement of this Bill by the Legislative Committee and the Council of the Association, and Advisory Committee members have secured endorsement by women's clubs and individuals.

² A copy of this may be obtained from the JOURNAL Office by sending 6 cents postage.

The *National Clothier* for August, 1919, prints the bill in full,³ and also discusses the British Merchandise Marks Act upon which the Barkley Bill is patterned. We ask you to write your representative urging favorable action on this bill as soon as it is reported, and to write Congressman Barkley expressing your personal interest and that of any group of consumers with whom you are connected. Awaken the interest of local dry goods merchants and get them to write indorsing the bill, which is as important to the honest merchant as it is to the consumer.

We recently learned that the bill was drafted originally by a sub-committee of the Interstate and Foreign Commerce Committee of the House about six years ago to meet requests for legislation to penalize the misbranding of a number of different articles, including leather goods and various textiles. It was unanimously reported by the Committee in the 64th Congress but failed to gain consideration on the floor. In the 65th Congress it was shelved for war legislation, and, although introduced during the present Congress and again referred to the Interstate and Foreign Commerce Committee, it has not yet received their attention. Congressman Barkley expects the bill will come up for consideration within the next month or two, and when the hearing is announced, the Association will be represented by delegates who will speak in its favor.

Encouragement of standard American dyes. The Committee also calls attention to the Longworth Bill which seeks to protect and develop the dye industry built up in America during the war against cut-throat competition by German dye stuffs manufacturers.⁴

The education of women and girl consumers to appreciate and demand quality in yard goods and ready-made garments must come slowly through various avenues of home economics teaching, which include women's magazines and extension work as well as schools, normal schools, and colleges. The central ideas will be the wisdom and duty of a careful planning of the wardrobe on the basis of a definite clothing budget, and the selection of conservative styles and reliable fabrics. The Committee has added its mite by securing for printing in the JOURNAL "Putting Over Budget Lessons," by Janet Cation, October, 1919, "Suggestions for a Demonstration on the Selection of Clothing," by

³ See also *Textiles*, July, 1919, and reference to the bill in the editorial section of the JOURNAL for Dec., 1919.

⁴ For articles on this subject see reference list in the Bibliography, p. 140. Also editorial, December JOURNAL, p. 557.

Zella Bigelow, February, 1920, and a "List of References of Timely Interest," page 139 of this issue. A further contribution is being prepared containing suggestions as to how work in textile and clothing selection may be incorporated in clothing courses in grammar and high schools.

Study of purchasing habits. It was the skepticism of the manufacturers and merchants as to the survival of the old-time "thrifty buyer" in numbers worth recognizing that goaded the Committee into launching its Study of Purchasing Habits. We refused to agree that women purchasers as a class no longer sought for quality and durability but were carried away by extreme styles, beautiful colors, and surface finish. "This may be true to a large extent in New York," we protested. "We think it cannot be true the country over, but we do not *know*, and we propose to find out."

The Committee has therefore drawn up and distributed a questionnaire supplemented by record blanks for a study of purchasing habits. This investigation is now being carried on simultaneously by groups of institutions of collegiate rank in various parts of the country to determine what textile fabrics are most frequently purchased for various common uses; what makes are considered staple in each of these lines; how the demand for these staples compares with the demand for novelties for the same uses; the trade names of such staples, together with names of manufacturers and other data. The twenty-six coöperating institutions have been divided into six committee groups, each with a chairman, for the study of fabrics purchased for the six following uses:—service dresses (wool, silk); underskirts (silk, cotton); coat linings and dress foundations (silk, cotton); women's underwear (cotton, silk, not knitted); children's dresses and infants' wear (not knitted); household textiles. There are from four to six institutions in each group, and these are so located that the data collected will as far as possible represent country-wide conditions.

We are expecting to secure supplementary reports from extension specialists in clothing, from students in salesmanship, and from certain retailers.

The data gathered by the members of each group will be submitted to the chairman who will tabulate it and send it in to the Central Committee in time for a report at the June meeting of the Association at Colorado Springs.

Study of minimum standards. The Committee felt that it might be embarrassing to find itself preaching minimum standards while at a loss for definite data as to what should constitute such standards. It therefore set as one of its early goals the gathering of such data for a limited number of fabrics:—underskirt and coat lining silks, a cotton for lingerie that may be finished either as cambric or nainsook, and serge for service dresses. The plans for the silks, which are the farthest advanced, provide for three distinct kinds of wearing tests to be supplemented by laboratory tests. These are respectively the *Worn Garment Test*, in which samples of outworn underskirt and coat lining silks, accompanied by a data sheet giving details of wear, are collected for laboratory analysis and testing; the *Small Piece Test*, in which pieces of new silk so selected as to approximate our tentative notion of a minimum standard for underskirt silk are sewed upon the garments in places that receive the heaviest wear, their wearing qualities recorded, and an unworn sample, reserved for the purpose, sent in⁶ for analysis and tests. We have actually begun on these two tests (February 1). The *New Garment Test* is perhaps the best and certainly the most ambitious of the three, and is not yet entirely worked out. We hope, with the advice and coöperation of one or more silk manufacturers, to purchase silk in standard navy blue and in black which approximates or surpasses our tentative standard. This silk will be made up into underskirts and the skirts disposed of to women interested in the test, who must pledge to keep a record of wear and turn it in to the Committee at a certain date. Profits arising from the transaction will be used to finance the rapidly growing work of the Committee.

The tests on silks are being carried out under the general direction of Mrs. Ellen B. McGowan of Teachers College, with the coöperation of Miss Ruth O'Brien of Iowa State College, Miss Trilling of Chicago University, and Miss Weirick of the Sears, Roebuck Laboratory. We hope to report shortly on the organization of our tests for lingerie cotton under Miss O'Brien, and for serge under Miss Grace Denny of the University of Washington.

We shall need your help with the silk tests outlined above. See details for the *Worn Garment Test* on page 109. If you are willing to coöperate in other tests write Mrs. McGowan at Teachers College, specifying the test you select, and enclose a self-addressed, stamped envelop. Instructions will be promptly forwarded.

Coöperation with organizations. Miss Sellers is presenting the idea of minimum standards to editors of women's magazines in New York City. The chairman has discussed the Committee's program with Mrs. Charles Greene, Director of the Home Economics Division of the General Federation and with the editor of the *Federation Magazine*. The chairman for the Clothing Section of the Federation, Miss Mary Matthews of Purdue University, is a member of our Advisory Committee. Plans are on foot to secure the interest of the A. C. A. and the Consumers League. We have offered our coöperation to the H. C. L. Division of the Department of Justice, and established relations with the Director of Women's Activities, who has sent out in mimeographed form a request for samples for our Worn Garment Test. We urge JOURNAL readers to keep in touch with the plans of the H. C. L. Division, which has some definite suggestions as to what women consumers can do to help deflate clothing prices. Write to the headquarters in your state, if one has been established, or to Miss Edith C. Strauss, Director of Women's Activities, H. C. L. Division, U. S. Department of Justice, Washington, D. C.

The Community Moving Picture Bureau of New York City is preparing under Mrs. Woolman's direction a series of films dealing with textile manufacture and selection. In planning these pictures Mrs. Woolman has had at heart the program of the Committee as well as the needs of the home economics student and the consumer in general.

Method of carrying minimum standards into effect. We are still in search of the simplest and most expedient method of identifying fabrics that have met or surpassed the minimum standard, so that consumers may readily recognize them. Among several possibilities, two appear especially promising. The first is a testing station to be maintained by the American Home Economics Association, which would (1) examine fabrics submitted to it by manufacturers and decide whether they met or surpassed the minimum standards proposed by the Association, either independently or in coöperation with national textile associations; (2) authorize for such fabrics the use of a copyrighted label or symbol protected by a license. We have the assurance of practical advertising men that such a plan is fundamentally sound. The second possibility is a similar testing station, maintained jointly by organizations of consumers, manufacturers, and retailers. In many respects this second plan is a bigger and more generous one than the first, yet its very bigness indicates that obstacles may arise in its path. It is evident, however, that either of these possibilities contains the germ of a

potential research foundation that would conduct impartial studies of fabrics from the standpoint of the use they are to serve; coördinate work being carried on by independent agencies; and out of its experience make constructive and authoritative suggestions that would in the course of time profoundly influence the consuming public on the one hand and the manufacturing and merchandising world on the other.

Conferences with the trade. Now that our preliminary work is fairly well blocked out we are ready to ask for further advice and coöperation from the "associations of manufacturers, retailers, and jobbers" mentioned in our birthday resolutions. A number of such conferences are being arranged for February in such centers as Chicago, New York, and Boston. We shall listen openmindedly to all suggestions, but before the conference closes we shall hope to drive home these two ideas:—

1. It would be good business for you if you could say, "This bolt of goods has been submitted to the Testing Station of the American Home Economics Association, and they have pronounced it to equal (or surpass, as the case may be) the standard they have established by careful wearing and laboratory tests. It bears their symbol, and this guarantees on their authority that it will give you satisfactory (or unusual) wear. This is a sort of clothing insurance you women have been needing for a long time."

2. If you accept this idea and help us work it out, you will have behind your reliable goods one of the biggest and most effective advertising forces in the country—the organized body of home economics teachers. These teachers according to the latest available figures came into intimate daily contact with 20,724 students in colleges and universities in 1917, 163,826 students in high schools in 1915, 39,414 students in federally aided vocational schools in 1919, and many more in the eighteen states that have part time compulsory education laws. They talked face to face with hundreds of thousands of homemakers in the extension service coöperatively maintained by the federal government and the agricultural colleges in forty-eight states. They reached hundreds of thousands of women through the home economics programs of state federations of Women's Clubs, and they have access to millions of consumers every month through the articles they contribute to the women's magazines. These home economics teachers are themselves consumers; they have many avenues for influencing the consumers of today; and they are molding the consumers of tomorrow. As an

organized body they are behind this plan for minimum standards, because they believe it is needed by the individual consumer and by the country as a whole. In the long run, your interests are identical with those of the consumer. Can you afford not to give serious consideration to our proposition?

Worn garment test. If you wish to coöperate, send two samples, each 6 by 9 inches, or the equivalent in pieces of a different shape, from the less worn parts of the garment, and one somewhat smaller sample from the most worn part to show the nature of the wear. In addition, fill out the Information Blank below as accurately as you can and enclose with the samples.

Send blank and samples to Miss Ruth O'Brien, Dept. of Chemistry, Iowa State College, Ames, Ia.

Information Blank

Samples of.....Year of purchase.....
 (Coat lining, underskirt)
 From what part of garment were large samples Small samples?.....
 taken?.....
 How long did you wear this garment before the first weak places appeared:—
 About how many weeks of wear?.....About how many hours a day?.....
 About how many days a week?.....
 Reasons for unusually hard wear, such as:—Friction from rough or scant skirts, tight fit
 around armhole or over hips, stoutness of figure, skirt rubbing on shoes, getting flounce
 repeatedly wet, perspiration.
 Do you consider this silk gave good, medium, or poor wear?.....
 Give name and address of manufacturer of garment or material, if you know it.....
 Give trade name of garment or material, if you know it.....
 Name.....Address.....
 Date.....

FIRE AND WATER IN THE CLASS-ROOM

ANNA BARROWS

What are the schools of home economics doing to show the public how to use fire and water intelligently?

There are schools where the casual observer might judge from the habits of the students that gas, hot water, and electricity were as free as air, costing nothing in either labor or money.

Even the teachers seem to feel little responsibility, and at midday all the electric lights may be on while the window shades are down.

Many young women have not learned how to wash dishes clean with little water and are much perturbed by the conditions under which many demonstration lectures must be given. There is great waste of soap where a large quantity of water is used and the dishes are no more sterile than those washed in a little very soapy water and then scalded with actually boiling water.

The regulation of the gas burners to avoid waste in boiling, and the transfer of kettles to the simmering burner, once they have reached the boiling point, saves fuel and produces a better result in the article to be boiled. The turning out of oven burners when three-fourths of the time for baking has elapsed also saves fuel and improves the product.

The fireless and pressure cookers are used in occasional lessons, but even their continuous use wherever suitable saves less fuel in the end than the habit of lighting gas after the kettle is ready to place on the burner, and the turning out of the burner before removing the kettle from the top or the pans from the oven.

Do all our schools for training teachers, even, show their pupils the monthly or quarterly cost of the fuel and water used in the class-rooms? Perhaps the household budgets do not always make the items as prominent as they deserve, but include them in rent.

In the north temperate zone, what is a reasonable allowance for each person a year for water and for fuel for warmth and for cooking?

Unless such instruction is given generally in our public schools, the art of cookery may soon depend on a few lumps of charcoal after the manner of southern Europe and India, where forests have been eliminated.

The prodigal use of natural gas in this country foreshadows what may come in future to the users of coal and its products.

Even where "white fuel," water electricity, is available, and the natural power seems inexhaustible, installation and maintenance are costly.

ABSORPTION OF FAT BY FRIED BATTERS AND DOUGHS, AND CAUSES OF VARIATION*

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What is the composition of fried eggs, apples, mush, or potatoes, as compared with boiled? How much fat should a pound of food reasonably be expected to take up in frying? How many pounds of doughnuts should one pound of dough produce? How many teaspoonfuls, or tablespoonfuls, of fat in a homemade doughnut? Is it the amount of fat contained in them that determines the indigestibility of doughnuts for many persons? Can a good quality of homemade doughnut be obtained which will be low in fat?

It is indeed a difficult matter to find reliable data for the answers to these and other important questions upon the same subject.

PREVIOUS EXPERIMENTAL WORK

Table 1 is compiled from earlier work (unpublished) done at Ohio State University in 1915-1916 by Rose Hughes in conjunction with the senior author of this article.

In general Miss Hughes found that fat absorption was about the same in lard as in cotton-seed oil. Some of the series she obtained seemed to show plainly that increase of temperature increased the fat absorption somewhat, provided all other factors were kept exactly the same; this, of course, is not the case, in practice, where increase in temperature is accompanied by decrease in time of cooking.

Miss Hughes' doughnuts, which showed a moderate fat absorption only, increased about 10 per cent in weight as a result of frying.

McKee,¹ in 1917, made doughnuts from the following recipe: 1½ cups milk (340 grams),² a little more than 6 cups of flour (709 grams), 1½ cups sugar (300 grams), 3 tablespoons Crisco (34 grams), 2 eggs³ (84 grams), 6 teaspoons baking powder (25 grams).⁴

* Published with permission of the Secretary of Agriculture.

¹ Fat Absorption in Frying Doughnuts, *Jour. Home Econ.*, Jan., 1918.

² According to U. S. Bureau of Standards table, the standard half-pint cup is 237.5 cc. In that case, a "standard cup" of milk (sp. gr. 1.032) should weigh 245 grams.

³ Evidently "2 cups" of egg for 84 grams, as printed in Miss McKee's paper, is a misprint. (THE JOURNAL understood that the "2 cups" referred to beaten eggs, probably yolk and white beaten separately. *Editor's Note.*)

⁴ Forty-eight weighings of 1 teaspoonful of baking powders of different ages, done in this Experimental Kitchen gave an average of 3.3 grams. 12 cans were used representing 8 brands. But variations among different samples ran from 2.7 grams to 4.4 grams per tea-

She rolled them not quite half an inch thick (1 cm.), cut them with a cutter of the usual shape, about $2\frac{1}{4}$ inches (6.5 cm.) in diameter and with a center hole almost one inch (2.1 cm.) across, then fried them in deep fat, viz. cotton seed oil, at 200°C., for 5 minutes. She found that they gained in weight by cooking, since they weighed from 19 to 24 per cent more after frying than before—in spite of the fact that they must have lost a good deal of water during cooking. This water loss would probably be about 15 per cent of their weight before cooking, according to our own experience with mixtures of this kind, fried at that temperature for that length of time. It may be calculated, from the figures which she gives on pages 19 and 20, that a doughnut weighing 36 grams before cooked and containing 1.8 grams of fat in the dough, would lose 5 grams of water and gain 13 grams of fat during this five minutes' frying, so that its weight after cooking would be 44 grams, of which 14.8 grams, or about one-third, is fat.

Morgan and Cozens⁵ made doughnuts from a recipe varying from Miss McKee's, in that they used about 20 per cent less of egg and 25 per cent more of flour. They report absorption of fat varying from 13 per cent (on the weight of the finished product) to 21 per cent. This is directly comparable with 10 to 22 per cent in the Hughes doughnuts and with about 33 per cent in the McKee doughnut,—if we have not misrepresented the figures. Both the Hughes and the Morgan doughs are rather high in flour and show a low absorption for that reason. The McKee doughnuts not only were low in flour, but also were fried for five minutes instead of three or four. Furthermore, they were cut as somewhat smaller doughnuts than in the other two cases, which gives them more surface for absorption, in proportion to the mass of the doughnut.

EXPERIMENTAL WORK DONE IN THE PRESENT STUDY

In order to determine, if possible, the effect of different components of the dough and also of temperature of the hot fat on the amount of fat absorbed by batters and doughs during frying, the series of experiments indicated in tables 2 and 3 were performed by the authors of this article. The following precautions were observed.

spoonful, though all weighings were done from measurements made by a single individual, whose different measurements of the same sample checked very closely. The loss of weight which results from aging appears to be the chief factor concerned.

⁵ Changes in Physical and Chemical constants of Fats used in Frying a Standard Dough, *Jour. Home Econ.*, Sept., 1919.

TABLE 1

*Amount of fat taken up during frying by various batters and doughs**

DOUGH OR BATTER	WEIGHT BEFORE COOKED	TIME OF FRYING	TEMPERATURE OF FRYING	FAT USED	FAT ABSORPTION BASED ON WEIGHT OF DOUGH	FAT ABSORPTION BASED ON WEIGHT OF COOKED DOUGH-NUT
		<i>minutes</i>	<i>degrees C.</i>		<i>per cent</i>	<i>per cent</i>
"Queen Fritters" (Equal parts by weight of eggs and boiling water; $\frac{1}{2}$ part each of flour and butter; cooked as mush, then eggs beaten in.)	8 balls, 19-30 grams each	6-8	170-190	Lard	17-25	
Same; thicker batter because cooked longer before frying.	7 balls, 28-49 g. each	6-7	180-225	Cotton seed oil	6-9	
"Apple Fritters" (Equal parts of flour, milk, and apple; $\frac{1}{2}$ part of egg; small amounts of baking powder and salt.)	8 fritters, 9-39 g. each	3-6	170-225	Cotton seed oil	13-26	
Cornmeal mush sauted†	3 slices, $\frac{1}{4}$ in. thick, 33-50 g. each	10		Lard	5-8	
Cornmeal mush fried†	3 slices, $\frac{1}{4}$ in. thick, 33-50 g. each	8	185-225	Lard	7-9	
"Swedish timbales" ($\frac{1}{2}$ part flour to 1 part milk, about $\frac{1}{2}$ part eggs and $\frac{1}{10}$ part oil, small amounts of salt and sugar. Fried as very thin shell.)	6 timbales, 5-8 grams each	$\frac{1}{2}$	175-200		42-52	
"Raised doughnuts" (Yeast dough)	7 doughnuts, cut as below; 55-63 g. each	2-5	160-190	Lard	7-12	
Doughnuts, three-egg. (100 grams sugar, 16 grams butter, 70 grams egg, 123 grams milk, 6 grams baking powder, 3 $\frac{1}{2}$ grams salt, 311 grams flour. Dough rolled $\frac{1}{2}$ inch thick, cut 3 inches in diameter.	8 doughnuts, 51-52 grams each	4	150-215	Lard	11-23	10-22

* This table is published with the consent of Edna White, formerly Head of Home Economics Department, Ohio State University.

† Other foods show more striking differences in fat absorption between the two methods. E. g., fried oysters absorbed 19 per cent fat, sauted 10 per cent; fried halibut cutlets 14 per cent, sauted 4 per cent.

Each mixture was freshly made up just before using, unless explicit statement is made to a different effect. Inasmuch as many of the mixtures which we desired to use could not possibly be rolled and cut in the shape of ordinary doughnuts, it was decided that a greater approximation to uniformity of shape and surface presented (and also of manipulation) would be attained by rolling the dough into a ball (if stiff); or by scraping it from the spoon in a single mass, if too soft to roll—since these soft doughs usually puff into ball shape during the frying. In almost every case, 128 grams of dough (or batter) was used at a single frying, in four balls of 32 grams each. In a very few cases, there were only 1, 2, or 3 balls of 32 grams each. All fryings were done for eight minutes (unless otherwise stated) in an iron kettle 8 inches high and 6 inches wide, weighing 2083 grams (something over $4\frac{1}{2}$ pounds), and holding about 5 quarts when full, or 5 pints when half-full. The amount of fat used was about $4\frac{1}{2}$ pints, or between 1850 and 1900 grams. The "doughnuts" were turned once, if possible (sometimes they refuse to be turned), in case they did not turn themselves; this was usually in the middle of the frying period, unless rapid browning of the under surface demanded an earlier turning. After cooking, they were thoroughly drained over the kettle of fat, on a wire skimmer, and were weighed within ten minutes after frying. The hot fat was weighed immediately after each frying, and the difference in weight before and after cooking of the doughnuts, was taken as the amount of fat absorbed by them during frying. Repeated weighings of the amount of fat left on the skimmer, or taken up by the paper on which the doughnuts were laid, showed that this is only a fraction of a gram, when due care is exercised, and hence need not be taken into account.

It may, however, be urged that the weight of fat remaining in the kettle after frying is an inaccurate measure of absorption, since the character of the fat is changed as a result of heating, in ways which change the weight of the molecule. Oxidation of the unsaturated carbon atoms does, of course, increase the weight of the molecule, while on the other hand, the splitting off of terminal carbon atoms from the fatty acid chain (e.g., in formation of acrolein) diminishes the weight of the molecule. However, a careful calculation of the maximum change in weight which could result from either one of these causes, under the conditions which obtain during frying, shows that such changes must be very small indeed, in comparison to the weight of the entire molecule. Many successive weighings of 30 gram samples of lard and

Crisco, each done after strongly heating in a platinum capsule for periods of one to ten minutes, during which pungent fumes were constantly issuing forth, showed that there was a very slight and progressively increasing loss in weight with each heating period. Yet under even these severe conditions, the change in weight amounted only to hundredths, thousandths, or ten-thousandths of a gram of fat, at each heating, and was therefore absolutely insignificant so far as these experiments were concerned. Furthermore, fat analyses by ether extract of cooked and uncooked doughs have been made for a number of these samples; in all cases, the results show very good agreement with those obtained by assuming that the gain in fat of the dough during frying is approximately equal to the loss in weight of the fat in the kettle.

All flour had one thirty-second of its own weight of baking powder sifted twice with it, shortly before using.

The eggs used in any given set of experiments were always broken and beaten together before weighing, in an effort to secure as great uniformity as possible, in raw materials. Similarly, milk from different bottles was thoroughly mixed; the same samples of flour, baking powder, and fat were used throughout, unless otherwise specified. Each set of experimental doughnuts or fried balls was required to have its own control, fried at the same time as the rest of the set. By comparison of the controls of different sets with each other, variations in manipulation of ingredients or in other special conditions could be recognized, which otherwise might have gone unnoticed.

"Percentage of fat absorbed during cooking" is obtained by dividing *amount of fat absorbed during frying by weight of dough before fried*. This is a much fairer measure of the effect of any given constituent of the dough or of any detail of manipulation upon fat absorption than is the usual method of judging the fat absorption by analysis of the cooked product. For some doughs increase greatly in weight during frying, some increase very little, and some actually decrease. If the water loss of the dough is great, absorption of five grams of fat may count for twice as much, expressed as percentage of finished product, as if the water loss were low; e.g., in Nos. 29 and 30, the fat absorption is identical, 11.5 grams of fat having been taken up in each case by 128 grams of dough. Also the original fat content of the dough is the same. Yet the excessive water loss of No. 30 (explained in the table) causes the 12 grams of fat to appear as 22 per cent of the final product, whereas in No. 29 it constitutes only 12 per cent.

21	Milk 49 parts Flour 100 parts Sugar 39 parts Egg 9 parts Butter 1 parts Salt 0.7 parts	1 c. milk 4.3 c. flour 1 c. sugar 1 egg 2 tsp. butter 2 tsp. salt	4.4 (Dough too soft to roll)	41 (Fried at 195°-177° for 6 minutes only)	16	260	36.3
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* One cup water is taken as 237 grams; 1 cup flour as 112 grams; 1 cup sugar as 200 grams; 1 egg as 45 grams; 1 tablespoon lard as 12 grams. Flour is assumed to contain 1 per cent fat; egg, 12½ per cent fat; butter 83 per cent fat; milk 4 per cent fat.

† Explosion of these balls occurred during frying, in some cases, due to imprisonment of steam in the hard crust formed by the stiff dough. Absorption of fat and water loss were calculated from data obtained by analysis of cooked product for moisture and fat.

‡ This flour was made from a stronger wheat, and had considerable aging; the gluten therefore was of higher quality than that of the flour used in the remaining experiments, except in case of those marked "strong flour."

TABLE 2--Continued

NUMBER OF EXPERI- MENT	MATERIALS USED		FAT IN DOUGH (CALC %)	FAT AB- SORBED AT 150°C.	WATER LOST AT 150°C.	VOLUME AFTER COOKED 150°C.	FAT IN PRODUCT COOKED AT 150°C.	FAT AB- SORBED AT 200°C.	WATER LOST AT 200°C.	VOLUME AFTER COOKED 200°C.	FAT IN PRODUCT COOKED AT 200°C.
	By weight	By measure									
16	Milk 50 parts	1 c. milk	1.6	18	12	208	18.5	9	14	201	11.2
	Flour 100 parts	4.3 c. flour									
17	Sugar 38 parts	1 c. sugar	2.4	7	13	211	10.0	8	17	211	11.4
	(Strong flour)										
18	Water 50 parts	1 c. water	3.4	10	9	219	13.3	16	15	265	19.2
	Flour 100 parts	4.3 c. flour									
	Sugar 19 parts	0.5 c. sugar	2.2	9	12	241	11.5	13	17	265	15.8
	Egg 28 parts	3 eggs									
	(Strong flour)		3.0	10	6	221	12.5	9	14	214	12.6
	Water 50 parts	1 c. water									
	Flour 100 parts	4.3 c. flour	3.0	10	6	221	12.5	9	14	214	12.6
	Sugar 38 parts	1 c. sugar									
	Egg 28 parts	3 eggs									
	(Strong flour)										

(Done at 175° instead of 150°)

(Done at 175° instead of 150°)

(Stood one hour before frying)

TABLE 3
Varying time and temperature

NUMBER OF EXPERIMENT	MATERIALS USED		FAT IN DOUGH (CALC.) per cent	LENGTH OF TIME COOKED minutes	TEMPERATURE AT WHICH FRIED degrees C.	FAT ABSORBED IN FRYING per cent	WATER LOST IN FRYING per cent	VOLUME AFTER COOKED cc.	FAT IN COOKED FRAGMENT (CALC.) per cent
	By weight	By measure							
22	Milk 34 parts Flour 100 parts Sugar 42 parts Egg 19 parts Butter 6 parts Salt 2 parts	1 c. milk 6.3 c. flour 1.5 c. sugar 3 eggs 3 T. butter 3 tsp. salt	4.9	8	200	43	22	—*	40
(Dough could easily be "patted out" into a sheet but did not roll easily.) (Fried at 195 to 188°C. for 6 minutes only.)									
23	Milk 40 parts Flour 100 parts Sugar 34 parts Egg 8 parts Lard 4 parts Salt 0.7 parts	1 c. milk 5.5 c. flour 1 c. sugar 1 egg 2 T. lard 1 tsp. salt	4.0	8	150	13	11	206	16.7
24	Milk 50 parts Flour 100 parts Sugar 34 parts Egg 30 parts Butter 10 parts Baking powder	1 c. milk 4.2 c. flour 0.8 c. sugar 3 eggs 3 T. butter 4 tsp. B. P.	6.7	10	200	19	13	206	24
(Fried immediately after dough was mixed.)									
25	Same as No. 24, but dough stood 1½ hours after mixed, before being fried			4	185	11	9	290	16
26	Same as No. 24, except that water replaced milk. Stood 1½ hours before fried			4	185	9	11	280	14
27	Same as No. 26, except that half the flour was replaced by corn starch. Stood two hours			4	185	16	5	270	18
28	Same as No. 27 except that water was replaced by milk. Stood two hours			4	185	19	10	280	24
29	Water 100 parts Flour 100 parts	1 c. water 2.1 c. flour	0.5	8	200	9	29.0	214	12

*The volume of these balls was too great to be measured in the 1000 cc. graduated cylinder.

TABLE 3—Continued

NUMBER OF EXPERIMENT	MATERIALS USED		FAT IN DOUGH (CALC.)	LENGTH OF TIME COOKED	TEMPERATURE AT WHICH FRIED	FAT ABSORBED IN FRYING	WATER LOST IN FRYING	VOLUME AFTER COOKED	FAT IN COOKED PRODUCT (CALC.)
	By weight	By measure	per cent	minutes	degrees C.	per cent	per cent	cc.	per cent
30	Same as No. 29, but cooked nine minutes over hot water, before frying.†			8	200	9	43.0	120	22
31	Water 50 parts Flour 100 parts	1 c. water 4.2 c. flour	0.7	8	200	4.3	18.0	189	6
32	Same as No. 31, but stood 1½ hours before being fried.†			8	200	2.2	9.0		3
33	Same as No. 31, but half of the flour was replaced by equal weight of cornstarch. Explosion as in 32			8	200	3.0	17.0		4
34	Same as No. 33, but 51 grams of dough were fried, as two ring-shaped doughnut-like pieces, instead of in two balls as usual. Explosion occurred nevertheless			8	200	12.0	25.0		14
35	Water 100 parts Flour 100 parts Egg 30 parts	1 c. water 2.1 c. flour 1.6 eggs	3.7	8	200	29.0	38		35
36	Same as No. 35 but flour and water were cooked over hot water nine minutes. Water lost during this cooking was restored. Egg and baking powder were added when mush was cool			8	200	11.0	36		17
37	Same as No. 35 but half the flour was replaced by equal weight of cornstarch. This made a very thin batter which scattered badly and tended to settle to the bottom during frying, thus presenting very large amount of surface for absorption			8	200	55.0	56		58

TABLE 3—*Concluded*

NUMBER OF EXPERIMENT	MATERIALS USED		FAT IN DOUGH (CALC.)	LENGTH OF TIME COOKED	TEMPERATURE AT WHICH FRIED	FAT ABSORBED IN FRYING	WATER LOST IN FRYING	VOLUME AFTER COOKED	FAT IN COOKED PRODUCT (CALC.)
	By weight	By measure							
38	Same as No. 37, but cooked as in No. 36. Cooking thickened the batter and it held together well		per cent	minutes	degrees C.	per cent	per cent	cc.	per cent
				8	200	6.5	30		11

† Baking powder was lost as a result of this cooking process, and the balls, having lost their leavening, and being quite dense in texture, remained submerged for 7 minutes. This accounts for the high water loss. But it will be observed that the gluten crust formed by the hot fat successfully resisted the entrance of excessive fat into the dough, in spite of the long submersion, for its fat absorption is no higher than that of No. 29.

‡ Two of the 4 balls exploded violently as a result of steam rapidly formed at this high temperature and rigidly confined by the hard crust. As a result of the explosion, much fat was lost out of the pan. Results were calculated from fat analysis of the cooked balls, two of which left the pan at the end of six minutes.

"Percentage of water lost during cooking" is calculated by subtracting the *weight of fat absorbed during frying* from the *weight of doughnut after cooked*, then subtracting this difference from *weight of doughnut before cooked*, then dividing this water loss by the *weight of doughnut before cooked*.

The following conclusions are deducted from tables 2 and 3 and from a considerable body of other work which has since been done with "Queen Fritters" and with doughnuts.

1. In general, the higher fat absorption occurs with a greater volume attained by the dough during frying.

2. The differences in absorption of these doughs when fried at 150° and 200°C. are rather marked as a rule and almost absolutely consistent. The lower temperature shows the higher fat absorption in doughs and batters made without egg; the reverse is true in egg batters and doughs. This is partly because the volume is larger at 150° in most cases where no egg is used, and larger still at 200° when it is used. But it is partly also because the crust formation (due to action of hot fat on the gluten and also upon other dough constituents to some extent) proceeds more rapidly at the higher temperature, unless the egg prevents rapid crust-formation because of its highly extensible properties. It is not to be assumed, however, from these experiments, that like differences in

absorption would occur with all other doughs; nor with these same doughs fried for shorter intervals in different forms, such as that of the ring-shaped doughnut. In fact, our later experimental work shows that at temperatures which are properly used for frying any ordinary doughnut dough (170° to 190°C.) the effect of a change of 10 to 20°C. in the temperature of the hot fat, upon fat absorption, would be so slight as to be unnoticed except as it acted to change the time of frying or the manipulation during frying.

It is true that 200°C. is too high a temperature for practical work⁴ and that 150°C. is too low. These temperatures were chosen however for this experimental work because of the fact that temperature influence is not very strong, so far as crust formation is concerned, on an edible dough. It rather affects color, texture, and volume. It was therefore thought best to exaggerate the temperature interval to some extent in order to be able to demonstrate that there is an effect of high temperature upon gluten in the formation of a fat-resistant dough at least in the absence of egg.

3. Increasing the softness of the dough, increases the fat absorption. Compare absorption of over 8 per cent in No. 4 with 6.3 and 6.6 per cent in No. 2 and about 5 per cent in No. 1. Compare also 9 per cent in No. 29 with 4.3 per cent in No. 31.

4. Use of a "strong" flour (larger amount or improved condition of gluten) results in a diminution of fat absorption as compared with closely identical mixtures in which flour made from a softer wheat is used. Compare No. 3 (5 per cent and 4.7 per cent of fat absorbed) with No. 2 (6.6 per cent and 6.3 per cent); also No. 7 (13 per cent) with No. 6 (14.5 per cent.)

5. Influence of manipulation of the dough is marked in comparing numbers 11 and 12, where the difference in the two flours used is by no means sufficient to account for so large a difference.

6. The influence of fat in the dough is to increase the fat absorption of the dough in which it is contained. Evidently the fat in the dough "draws other fat in after it." This is in spite of the fact that fat tends to decrease the volume of the cooked ball. Nos. 6 and 7 contain very little fat, yet they show absorption of 13 per cent and 14.5 per cent, as compared with 5 per cent in No. 1; No. 5 compares in the same way with No. 3. It is not clear why No. 5, which is a much softer dough

⁴ So far as the ordinary home product is concerned.

than Nos. 6 and 7 and also contains more fat, should show a slightly lower fat absorption than they show, instead of a higher one. Doubtless the reason for this unexpected difference is concerned with some detail of manipulation. No. 5 was one of the earliest of these experiments, and may very likely have been kneaded until smooth and compact. Nos. 6 and 7 were very lightly kneaded, and as a result tended somewhat to separate into convoluted lobes as they expanded in the hot fat. This increase in surface did, of course, increase the fat absorption.

7. The influence of egg in the dough is to increase the fat absorption during frying. Compare Nos. 8, 9, and 10 with No. 1 (7, 8, and 9 per cent fat absorbed instead of 5 per cent). Compare No. 35 (29 per cent absorbed) with No. 29 (only 9 per cent fat absorbed). This may be because of the thinning effect of the egg liquid on the batter; it may be because adding egg increases the fat content of the dough; it may be also because egg increases the volume attained during frying. The effect of dipping the dough into egg as is done with croquettes, so that an outer egg crust is formed on the doughnut, is to decrease the fat absorption; but this is a different proposition from that of putting egg into the dough.

Miss McKee's conclusion¹ was that increase of egg in the batter decreased the fat absorption. It will be noted, however, that at the same time that she increased the egg she also added 200 grams of flour. We believe that the decreased fat absorption she obtained was due to the increased gluten content of the dough rather than to its increased egg content. Her conclusions in regard to the effect of fat and sugar in the dough are fully confirmed by our results.

8. The influence of sugar in the dough is to increase the fat absorption. Compare No. 15 (9.3 per cent, 6.2 per cent) with No. 12 (6.2 per cent, 1.5 per cent). No. 16 contains twice as much sugar as No. 15, and shows its effect still more (18 per cent and 9 per cent, instead of 9.3 per cent and 6.2 per cent.) No. 14 is not strictly comparable with No. 1 because the latter was made with a weaker flour; yet the 150°C. sample shows the effect of the addition of sugar.

9. The influence of using milk instead of water to mix the dough is on the whole to increase the fat absorption, especially at 150°C. Compare No. 15 with No. 14—9.3 per cent against 7.8 per cent, and 6.2 per cent against 4.6 per cent. Or compare No. 18 with No. 17—10 per cent against 7 per cent, 16 per cent against 8 per cent. No. 20 fails to show a similar comparison with No. 19, because of the fact that it stood

for an hour before frying. No. 26 cannot fairly be compared with No. 24 for the same reason. (See conclusion No. 12.) Compare No. 28 (19 per cent fat absorbed) with No. 27 (16 per cent fat absorbed).

10. A "rich dough" containing large quantities of egg and milk, and moderate quantities of sugar and fat, can be fried without undue absorption of fat, if pains be taken to balance other ingredients with the proper proportion of flour; e.g., Nos. 17 to 20 inclusive, and 23 to 28 inclusive, do not show high absorption. An absorption below 20 per cent of the weight of the dough may be looked upon as very moderate in frying doughnuts. An absorption above 30 per cent is high, and produces a very rich doughnut. The rich doughnut is not necessarily greasy. "Greasiness" pertains to unabsorbed fat, and is not found in conjunction with a crisp crust, unless the absorption has been highly excessive.

11. The influence of substituting cornstarch for part of the flour is, as might be expected, to increase the fat absorption very greatly. Compare No. 27 (16 per cent absorbed) with No. 26 (9 per cent absorbed); No. 37 (55 per cent absorbed) with No. 35 (29 per cent absorbed). The increase is due partly to the fact that cornstarch contains no gluten, and gluten is the constituent of the dough most suitable for forming a fat-resisting crust; and partly to the fact that substitution of cornstarch for flour increases the proportion of raw starch grains in the dough, that is, increases the absorbing surface presented to the hot fat.

The influence of substituting cooked mashed potato for part of the flour is quite opposite to the influence of raw cornstarch, as will be explained in a future article. The reason for the discrepancy of effect in these two cases is perhaps obvious.

12. Allowing the dough to stand and "ripen" for an hour or more depresses the fat absorption, and often profoundly so. Compare No. 25 (11 per cent fat absorption in four minutes frying) with No. 24 (19 per cent in ten minutes); No. 32 (2.2 per cent) with No. 31 (4.3 per cent). No. 20 as compared with No. 19, and No. 26 as compared with No. 24 show similar effects, though, in one case, the substitution of milk for water would have led one to expect higher instead of lower absorption. The most striking examples of this phenomenon occur, however, in later work to be published soon.

This lower fat absorption is perhaps due to the fact that in standing, the moisture tends to distribute itself uniformly throughout the dough, and the separate gluten particles begin to fuse or "cake" as soon as they become thoroughly wet; this greatly promotes crust formation upon contact with the hot fat.

13. Cooking the flour or flour plus cornstarch greatly decreases fat absorption. No. 36, cooked, 11 per cent absorption, is to be compared with No. 35, 29 per cent. No. 38, 6.5 per cent absorbed, is to be compared with No. 37, 55 per cent absorbed. The effect of cooking starch to a paste is somewhat similar to the effect of ripening gluten. The formation of a homogeneous layer from a number of distinct granules evidently promotes the formation of a resistant crust. Doubtless cooking may also increase the resistance of the gluten to some extent. (It is true that pieces of bread when fried, take up a great deal of fat; but that fact is due to their porosity and the great amount of surface presented for absorption.)

14. Increase of surface in proportion to mass will of course increase fat absorption greatly, unless at the same time, the length of time of frying can be materially reduced. See No. 34, 12 per cent absorption for rings as compared with 3 per cent absorption for the same weight of the same dough fried as balls.

15. The effect of manipulation, both upon the dough and during frying, is very great. In general, any manipulation which tends to compress or pull or stretch the gluten also tends to decrease the fat absorption. This may easily be because it facilitates the union of gluten particles, which of course are separated in the dry flour and are still somewhat distinct in a lightly mixed dough, for a short time after mixing.

Any roughening of the dough, such as may take place in loosening a sticky doughnut from the surface on which it rests, preparatory to frying it, will tend to increase the fat absorption.

Cracking of doughnuts greatly increases absorption. Frequent turning increases it, because it constantly exposes a fresh surface to the hot fat; except that under some circumstances, frequent turning may prevent cracking, and thus may conduce indirectly to low absorption.

Most of the factors which lower fat absorption also tend to make doughnuts tough or hard and "bready." This is true of a considerable increase in flour and of the use of considerable quantities of mashed potato. The best means of applying, to actual practice, the principles discovered in this experimental work will be discussed in a future paper. The results upon which this second paper is based confirm those shown in these published tables.

Temperature of liquid used for mixing dough may be of importance for fat absorption, especially if much sugar is used, or if coarse sugar is

used. The cold liquid has less solvent action than does the warm even if the temperature difference be merely the difference between the ice box and the kitchen. The effect of undissolved crystalline masses of sugar which stand out in the dough is apparently an unfavorable one; the melting down of these crystals during frying appears to promote fat absorption.

Another practical question is whether to roll the dough half an inch thick and fry doughnuts which will "swell shut" in the center, so that they must cook five minutes; or to roll the dough one-quarter inch thick and cut a large center out, so that the doughnut fries in half that time.

H. R. 12078

Mr. Fess introduced the following bill in the House of Representatives, January 26, 1920. It was referred to the Committee on Education and ordered to be printed.

A BILL TO AMEND AN ACT ENTITLED "AN ACT TO PROVIDE FOR THE PROMOTION OF VOCATIONAL EDUCATION; TO PROVIDE FOR COOPERATION WITH THE STATES IN THE PROMOTION OF SUCH EDUCATION IN AGRICULTURE AND THE TRADES AND INDUSTRIES; TO PROVIDE FOR COOPERATION WITH THE STATES IN THE PREPARATION OF TEACHERS OF VOCATIONAL SUBJECTS; AND TO APPROPRIATE MONEY AND REGULATE ITS EXPENDITURE," APPROVED FEBRUARY 23, 1917.

Be it enacted by the Senate and House of Representatives of the United States in congress assembled:

That the Act entitled "An Act to provide for the promotion of vocational education; to provide for coöperation with the States in the promotion of such education in agriculture and the trades and industries; to provide for coöperation with the States in the preparation of teachers of vocational subjects; and to appropriate money and regulate its expenditure," approved February 23, 1917, be, and the same is hereby, amended by adding thereto the following section:

SEC. 19. That for the purpose of coöperating with the States in paying the salaries of teachers, supervisors, or directors of home economics subjects, there is hereby authorized to be appropriated for the use of the States, subject to the provisions of this section, for the fiscal year ending June 30, 1921, the

sum of \$500,000 and annually thereafter for nine years an amount for each year equal to the amount appropriated for the year preceding increased by \$250,000, and for the fiscal year ending June 30, 1931, and annually thereafter, the sum of \$3,000,000; such appropriations to be in lieu of the appropriations for coöperation with the States in the payment of the salaries of teachers of home economics subjects provided by section 3, and to be allotted and paid to the States in the same manner and upon the same terms and conditions, except as herein otherwise prescribed, as the funds provided by said section 3; the acceptance by any State of the benefits of the Vocational Education Act, approved February 23, 1917, being deemed an acceptance of the benefits of the appropriations for home economics authorized by this section and entitling such State, upon compliance with the terms and conditions prescribed hereby, to its allotment of the appropriations herein authorized: *Provided, however*, That the appropriations provided by said section 3 shall hereafter be available solely for the purpose of coöperating with the States in payment of salaries of teachers of trade and industrial subjects, except that, if for any reason it is impossible for any State to meet the conditions prescribed for the use of its allotment of the appropriations for home economics authorized by this section, such State may continue to use its allotment of the appropriations contained in section 3 for home economics education as heretofore, subject to the conditions thereby prescribed. That the appropriations thereby authorized shall be allotted to the States in the proportion which their population bears to the total population of the United States, not including outlying possessions, according to the preceding United States census: *Provided*, That the allotment of funds to any State shall be not less than a minimum of \$5,000 for any fiscal year prior to and including the fiscal year ending June 30, 1926, nor less than \$10,000 for any fiscal year thereafter. And there is hereby authorized to be appropriated annually the sum of \$50,000, or so much thereof as may be necessary, which shall be used for the purpose of providing the minimum allotment to the States provided for in this section. That of the moneys authorized to be appropriated as provided by this section 5 per centum may be deducted and used for the purpose of making or coöperating in making studies and reports to aid the States in the organization and conduct of home economics education, such studies and reports to include homemaking pursuits, economies in the home in the provision of food, clothing, and shelter and the organization of home economics material to assist in the Americanization program, and for administrative expenses incident to performing the duties imposed by this Act, including salaries of such employees in the District of Columbia or elsewhere as the board may deem necessary; actual traveling and other necessary expenses incurred by the members of the board and its employees under its orders, including attendance at meetings of educational associations and other organizations; rent

and equipment of quarters in the District of Columbia and elsewhere; purchase of books of reference, law books, and periodicals; typewriters, and exchange thereof; miscellaneous supplies, postage on foreign mail; and all other necessary expenses.

SEC. 20. That in order for any State to secure the benefits of the appropriations authorized by section 19 of this Act, the State Board for Vocational Educational Education of the State, created or designated in accordance with the provisions of section 5, shall prepare plans showing the kinds of home economics education for which it is proposed that the appropriation shall be used. Such plans shall be submitted by the State board to the Federal Board for Vocational Education, and if the Federal board finds the same to be in conformity with the provisions and purposes of this Act, the same shall be approved; that any State may use the sums allotted to it under the provisions of section 19, or any part thereof, for the salaries of teachers of home economics subjects in schools or classes or for the salaries of supervisors or directors of the same. The State board of any State shall also provide in its plans for home economics education that such education shall be conducted in schools or classes which are under public supervision or control; that the controlling purpose of such education shall be to fit for useful employment in the home or other occupation in the field of home economics; that such education shall be of less than college grade and shall be designed to meet the needs of persons over fourteen years of age who have entered upon or are preparing to enter upon the work of the home or other occupation in the field of home economics; that the State or local community, or both, shall provide the necessary plant or equipment to be determined upon by the State Board with the approval of the Federal Board for Vocational Education as the minimum requirement in such State for education in home economics subjects; that the total amount expended for the maintenance of such education in any school or classes receiving the benefit of allotments for home economics education shall be not less annually than the amount fixed by the State board with the approval of the Federal board as the minimum of such schools or classes in the State; that at least one-third of the sum allotted to any State for the salaries of teachers, supervisors, or directors of home economics subjects, shall, if expended, be applied to part-time schools or evening classes for workers over fourteen years of age who have entered upon employment; and that the teachers, supervisors, and directors of home economics subjects in any State shall have at least the minimum qualifications for teachers, supervisors, and directors, to be determined upon for such State by the State board with the approval of the Federal Board for Vocational Education. The provisions of this section shall be in lieu of the provisions of section 11 in so far as the same relate to home economics.

IS THE AVERAGE HOME SANITARY?

Is the average home conducted along approved lines of sanitation? Are individual towels provided? Are common drinking utensils used? Are dishes thoroughly and properly washed? Are cups, forks and spoons scalded after each usage? Are soiled handkerchiefs properly cared for?

When one member of a family contracts a common cold, other members generally contract colds in due season. Affectionate greetings, the kissings and the embracings, even hand-shaking, between infected and uninfected members have considerable to do with the transmission of colds as well as the promiscuous sneezings and careless nose-blowings. Droplet and spray infections also play their part. These methods of transmission are important and probably constitute the chief factors in the spread of common colds.

On the other hand, the use of the common towel and drinking cup, the careless washing of dishes, especially cups, forks, and spoons, as well as the careless disposal of soiled handkerchiefs, may, under some conditions, be of even greater importance in the spread of common colds.

At any rate, no household can afford to neglect the practice of common approved methods of sanitation. Their adoption will undoubtedly have considerable to do with the prevention of the spread of communicable diseases other than common colds. No family should tolerate the common towel or the common drinking cup, and as for the efficient washing of dishes, that is the pride of every good housewife.—*Mo. Bul. California Bd. Health, Aug., 1919.*

The compiler of the above statements might well have added, Is everyone careful to wash the hands thoroughly after visiting the toilet, especially before returning to the kitchen or to other work that means the handling of food? Typhoid fever has been spread many times through the neglect of this simple precaution. Aside from this danger, it is not pleasant to think of such soiling of food. We do not want feces on our food, even in minute amounts, any more than we want food sprayed with the excretions of the nose and throat of the person who sneezes and coughs over it.

HOME ECONOMICS IN A PRIMITIVE ARMENIAN VILLAGE

HESTER DONALDSON JENKINS

Miss Mianzare Kaprielian, a graduate of Constantinople College for Girls, has been doing an unique piece of work in domestic teaching.

After she left college, she took one of the very pleasant teaching positions in an American school in Asia Minor. But one day she became dissatisfied with her soft work, for she heard from a missionary a story that moved her deeply. It was of a tiny Armenian village, stranded in an out-of-the-way corner of Asia Minor, where the people lived in a terribly primitive state. They were *her* people, and she could not sleep in her pretty bed room until she had decided to go to them and serve them.

So, accompanied by the missionary, she made her difficult way to Chalgara, the stranded village. Of course there was no inn in the place, so she was put up, (or rather *down*, for her bed was a mattress on the floor) by one of the village families. She found herself in a room dirtier than she had ever seen before. Every instinct revolted. The next morning she arose and girded herself for toil, and this refined, educated lady scrubbed the unspeakable floor and thus gave her first lesson to the wondering women of Chalgara.

It was only the Alpha of cleanliness to be followed as soon as possible by other letters. The church she found to be almost as dirty as the houses. Expressing her disgust, she gathered together a corps of women and set them to making the edifice decent.

She was, naturally, more than a nine days' wonder to the Chalgarites, who gaped at her neat black dress, her smooth hair, and especially the dainty white collar and cuffs that she wore. They themselves had been sewed tightly into blouse and bloomers since the beginning of the season. Their many tight braids of hair had not been unbraided sometimes for years. It was a marvel to them when she took down her smooth hair, combed and brushed it, and then recoiled it neatly on her head. She also showed them all her apparel and how it came off and on.

Such object lessons were followed by classes in cutting, sewing, and donning of clothes. The women of Chalgara began to prink.

At the first possible moment she built a house for herself. She planned it and supervised the work. The result was a building of unparalleled splendor to the Chalgara mind. It had a wooden floor and doors and windows. No chimney, of course, but a pipe coming through

a window carried out the smoke. There were no partitions in it, but each corner was a separate room, from which radiated education to the people of Chalgara. In one corner was the oven, and here lessons in cooking and the clean preparation of food were given; in another corner was the bed, a model of neatness and daintiness; in the third was a bench and stools, with the Bible and spelling book, where the children were taught letters and religion; and the fourth corner was the living room.

The money for her living Miss Kaprielian begged from friends and from Constantinople College. The students of the latter felt that Chalgara was their college settlement and gladly took up annual collections for the work. I was in the College when this fragile-appearing lady came to tell us of her pioneer work. She made very light of the hardships.

I asked her what she had to eat in Chalgara.

She replied cheerfully, "Oh, we have plenty of eggs."

"Meat?" I asked.

"No, they don't often kill an animal."

"Vegetables?"

"Only two kinds, but plenty of eggs."

"How about milk?"

"Well, there is really no milk, but," and she smiled with luminous tolerance, "there are *plenty* of eggs."

She did not, however, rest with such a menu. She began by showing the men other vegetables to plant. Then she bought a cow.

Oh, that cow! What a wonder it was. And how the people gathered about to see her milk it; and what good cheese and butter she made. In a short time Chalgara had a small but flourishing dairy industry.

Miss Kaprielian became quite naturally the confidant of the women, and straightened out many a domestic difficulty for them. One bride came to her with a personal problem to solve. Should she turn over her private fortune to her husband, or would it be right to keep it for an emergency. Inquiry discovered that the fortune amounted to \$2.43! Miss Kaprielian assured her that she would be justified in keeping it.

What this Armenian lady is doing in Chalgara is an illustration of what many a student going out from Constantinople College could do. Few towns are so primitive as Chalgara; but students who could have a good training in home economics in Constantinople would have endless fields of usefulness opened to them.

A COURSE FOR PRACTICE IN HOMEMAKING ADJUSTMENTS

FOR A LIMITED GROUP OF WOMEN TRAINED IN HOME ECONOMICS

*Under the Direction of the Committee on Home Economics of the Charity
Organization Society of the City of New York*

Aim. The aim of this course is to bring students, teachers, and other workers in home economics into closer contact with home living conditions and with the methods by which various social agencies are endeavoring to raise home standards and prevent personal and family breakdowns.

Admission requirements. Although the training is planned primarily for women with professional experience in home economics, it is also open to college juniors and seniors who are especially recommended by the head of their home economics department. The size of the group is limited to thirty-five. Applications for membership must be received by May 1, 1920.

Time. The course begins Thursday, June 3, and ends Wednesday, June 30. Hours 9:00-5:00, Monday to Friday of each week.

Type of work. One day a week will be used for round-table discussions and for special lectures and for visits to social agencies. Four days a week will be spent in field work carefully arranged to meet the needs of the individual pupil. This year special training can be provided at the Morningside Nutrition and Homemaking Center which has just been established by the Home Economics Committee. There is also opportunity for nutrition work with hospital clinics and various health and social agencies and for social case work training with family social work agencies.

Fees and college credit. A fee of \$24.00 is to be charged for the training. This fee is payable in advance to the Charity Organization Society or to colleges making special arrangements with the Society with reference to payment and credit recognition for the course when taken by their students.

For further information and application blanks write to Miss Emma A. Winslow, Secretary, Committee on Home Economics, Charity Organization Society, 105 East 22nd Street, New York City.

EDITORIAL

Yeast as A Food, A Medicine, and A Laboratory Reagent. A surprising amount and variety of work has recently been published on yeast. In vitamine experiments on rats and pigeons yeast has long been used as one of the most common sources of water-soluble B, and the "autolyzed yeast" (the filtrate from yeast that has stood at 37.5°C. from 24 to 48 hours) has been shown by Williams and Seidell¹ to be more effective than fresh yeast. As a result of this experimental work yeast is now used² in cases of human beri-beri and found to be only slightly less efficacious than rice polishings. Doses of from 2 to 4 cc. of autolyzed yeast filtrate every 3 hours have rapidly removed symptoms of infantile beri-beri. Larger doses have shown good results with adults.

Yeast may be used as a cure for other diseases than beri-beri, especially diseases of the skin and of the gastro-intestinal tract. Hawk³ reports that 50 out of 52 cases of furunculosis (boils), acne vulgaris (common pimples) and acne rosacea, and constipation were improved or cured by the yeast treatments. The explanation of this action we hope will soon be forthcoming. The usual daily dose was two or three cakes taken in water, beef tea, or orange juice. In some cases living yeast was used, in others, dead yeast (that had been killed by boiling water). Dead yeast was preferable where there was gas formation. One case of constipation yielded to living yeast but not to dead yeast.

Yeast may also serve as a food. During war conditions in Europe it was used extensively for cattle feed and was considered an excellent source of protein. It has the advantage of being independent of crops and seasons and of being an otherwise waste product. To determine its value as a food for man much experimental work on men and also on dogs and rats has been done in both Germany and the United States to ascertain what per cent of its large nitrogen content is available and to what extent it may be used to supplant other proteins. Osborne and Mendel,⁴ feeding yeast to rats as the sole protein, have shown the nitro-

¹ Williams and Seidell, *Jour. Biol. Chem.*, 29, 145, 1917.

² Saleeby, *Philippine Jour. of Science*, 14, 11, 1919.

³ Hawk, Knowles, Rehfuess, and Clarke, *Jour. Amer. Med. Assoc.*, 69, 1243, 1917.

⁴ Osborne and Mendel, *Jour. Biol. Chem.*, 38, 223, 1919.

gen to be well utilized (74 to 83 per cent) even when the experiments were carried on for a year. No toxic effect was observed as had been thought possible from earlier experiments. As the sole source of nitrogen in experiments on man, Funk⁵ found it not well utilized, but Hawk⁶ recently has obtained excellent results when it supplied 10 to 30 per cent of the protein of the diet. He dried the yeast and ground it into a powder, which could be used to replace 50 per cent of protein in wheat biscuits, and 25 per cent of protein of meat in meat preparations. With this use of yeast in both low and high protein diets the yeast was well utilized and in some cases a positive nitrogen balance was obtained.

Another recently⁷ developed use of yeast is in experiments to test for the presence of vitamins in foods, since the yeast plant needs water-soluble B for its own optimum growth.

Yeast, then, may be regarded as a source of water-soluble B, a valuable reagent in studying vitamins, a therapeutic agent in diseases of the skin and of the gastro-intestinal tract, and a source of protein for animals and man.

Iodine, it has recently been shown, is probably among those inorganic elements necessary for the student of nutrition to consider, especially in its relation to goiter and the thyroid gland.

In April 1917, Marine and Kimball¹ began a series of observations on goiter in Akron, Ohio (in the midst of one of the "goiterous regions") by a survey of the amount of goiter among 3872 girls in the public schools from the fifth to the twelfth grades inclusive. They found that 56.41 per cent had a hyperplastic condition of the thyroid gland which might be considered simple goiter. Iodine was used as a therapeutic measure by giving 2 grams sodium iodide in 0.2 gram doses for 10 consecutive school days twice a year—autumn and spring. Seven and nineteen months later two other surveys of the same schools were made. The most striking results obtained were that not a pupil in whom the thyroid was normal at the beginning and who took iodide showed any thyroid enlargement, while of those not taking iodide, 15.9 per cent showed definite enlargements. Also of the girls with slight goiter those taking iodide improved somewhat more than those without.

⁵ Funk, Lyle, and McCaskey, *Jour. Biol. Chem.*, 27, 173, 1916.

⁶ Hawk, Smith, and Holder, *Amer. Jour. Physiol.*, 48, 199, 1919.

⁷ Williams, *Jour. Biol. Chem.*, 38, 465, 1919.

¹ Marine and Kimball: *Jour. Lab. and Clin. Med.*, 3, 40, 1917; *Arch. Int. Med.*, 22, 41, 1918; *Jour. Amer. Med. Assoc.*, 73, 1873, 1919.

Although this is the first extensive work done with human beings, the fact that iodine could prevent goiter had been observed some time before in connection with the sheep growing industry in Michigan. Prior to the discovery of the salt deposits around the Great Lakes the sheep industry seemed hopeless, but with the use of the salt the sheep growers ceased to have trouble, due to the fact that the iodide content of the salt was supplying the needs of the sheep. Kimball and Marine were also able to control an outbreak of goiter in the salmon and trout hatcheries by adding potassium iodide to the water or feeding whole sea fish for part of the diet.

As to the sources of iodine for human nutrition, Forbes and Beegle² found traces in some samples of almost all types of foods (animal, vegetable, grains, condiments, and water) but not in all samples of the same food. Sea foods (agar-agar, Irish moss, and sea weeds) are exceptions. They universally contain iodine. In other words, the presence of iodine in foods other than sea foods is accidental due probably to the fact that iodine is not essential to plant growth. Consequently, our only dependable source is the inorganic form.

It is interesting to note that Kendall³ working at the Mayo clinic has succeeded in isolating from 6550 pounds of fresh hog thyroid 33 grams of an iodine containing compound (thyroxin) which is the active principle of the thyroid gland. He has determined its structural formula and also its specific action by feeding it to people suffering with myxedema and cretinism—diseases due to diminished thyroid activity.

ERRATA

In the February number of the JOURNAL in speaking of the work of Daniels and Byfield, Dr. Byfield was inadvertently referred to as Miss Byfield. Dr. Albert H. Byfield is the physician at the head of the Department of Pediatrics in the Medical School of the State University of Iowa. The work of Miss Daniels is in his department.

In the article on Recent Advances in our Knowledge of Food Selection and Preparation in the January number, the last paragraph on page 17 should read "Osborne and Mendel have investigated the relative efficiency of foods as *antineuritics*," not *antiscorbutics*.

² Forbes and Beegle: *Jour. Med. Research*, 34, 445, 1916.

³ Kendall: *Jour. Biol. Chem.*, 39, 125, 1919.

BOOKS AND LITERATURE

Teaching Home Economics. By ANNA M. COOLEY, CORA M. WINCHELL, WILHELMINA H. SPOHR, AND JOSEPHINE A. MARSHALL. New York: The Macmillan Company, 1919, pp. 555. \$1.80.

The book is a graceful tribute of remembrance to Helen Kinne and a recognition of "her great share in the establishment of ideals in the teaching of home economics." The authors took upon themselves a large task as indicated in the statement of their aim, namely, to "offer suggestions for the organization, administration, and teaching of home economics subjects." Work in any one of these divisions would be no small task.

The authors say, "It is taken for granted that the students who will use it will be familiar with the scope of the field," and that "the book is intended for use primarily in normal schools and colleges" though they "hope that the social workers, vocational advisors, and lay readers will find in this book suggestions of value." They specially stress the fact that they wish to "attack the subject in the light of the new vision of education as a factor in social evolution." "Adaptation has been made the burden of the message throughout the book."

The attempt to cover in outline the whole field is treated under four different divisions: (1) Home economics as an organized study in the school program; (2) Organization of courses in home economics; (3) Planning of lessons; (4) Personnel, materials, and opportunities; (5) Addenda.

Part One brings together "the response of womanhood to modern social demands," "the response of educational agencies to the needs of women," "the development of home economics," and "the interrelation of home economics with other subjects in the curriculum." This part does give both the backward and the forward look which is necessary for the teacher to interpret her present needs and is suggestive at many points.

Part Two gives actual courses of study of different types and kinds for a great variety of schools. Chapter eight, Home Economics in the Rural Schools, seems to the writer a very inadequate presentation of the subject. It gives a wrong sense of values to attempt to discuss the rural situation, home economics extension, influence of the Smith-Lever Act, County Farm Bureau, and the Home Demonstration Agent in a few pages. In the judgment of the reviewer, it would have been better to have named these agencies and concentrated the attention on the types of schools.

The quality of instruction, the planning of lessons, and the aim of instruction are clearly set forth in Part Three.

Part Four has good suggestions on the interrelationship of school and community interests and valuable helps in the study of equipment.

One of the good features of the book is the list of questions after each chapter and the suggested references for collateral reading. The authors have emphasized clear thinking and a study of the particular needs of the school and community.

While the authors have succeeded in bringing together in one volume material which will be very helpful to the discriminating teacher of home economics, the undertaking was so great as almost to prevent adequate treatment of the various parts.

ISABEL BEVIER,
University of Illinois.

Garments for Girls. By CELESTINE LEONTINE SCHMIT. New York: The Century Company, 1919, pp. 249, \$1.25.

The preface and foreword of this book state something of its plan, some features of which are to offer opportunity for close correlation with other subjects—to make it possible for the teacher to give more class instruction by presenting problems, every detail of which has been carefully worked

out—and to eliminate the expense and wastefulness of commercial patterns. There is no statement however as to the grade of students for whom the work is intended, but from the character of the problems and the method it would seem that the book was suited to high school or college students, depending on their previous training.

The problems are all good, the sequence well planned, and the illustrations, both line drawings and half tones, are excellent. The drafts are the important feature of the book. While the value of drafting for certain groups of students is fully recognized some of the drafts illustrated in this book, with their plain lines, dotted lines, arrows, lettering, numbering and other symbols, appear so complicated that only an experienced teacher could tally them up with their accompanying directions. Moreover it is a question whether many teachers would have sufficient time for their work to be willing to consume so much in drafting, especially if their students had not previously had a good course in mechanical drawing.

The directions for making the garments are clearly given, and the finishes suggested are excellent. The book would be of still greater value in home economics work if some general material was given separately instead of being so closely interwoven with the directions for making the problem. As the book has no index it is impossible to look up seams, finishes, and other points of construction to apply to other problems.

BLANCHE E. HYDE,

George Peabody College for Teachers.

The Hotel St. Francis Cook Book. By VICTOR HIRTZLER. Chicago: The Hotel Monthly, 1919, pp. 432, \$5.00.

This book contains a bill of fare for each day in the year suitable for a hotel. Each menu with accompanying recipes occupies a page. There is a classified as well as a general index so that the recipes may be found without difficulty. The recipes are suggestive, especially for anyone who desires a great variety in menus.

Many of the menus set a good standard of simplicity that is none too common in first class hotels.

Victor Hirtzler is the chef of the Hotel St. Francis, San Francisco.

Scientific Problems of Alimentation During the War. (*Problèmes Scientifiques D'Alimentation en France pendant la Guerre*). Minutes of the Nutrition Committee of the Society of Biology, with analytical bibliography of French work published 1914-1918; by R. Legendre, Secretary, Paris, 1919.

This committee was organized in May, 1918 under the chairmanship of M. Charles Richet and at the request of MM. Gley and Langlois, French delegates to the Inter-Allied Scientific Commission on Alimentation. This report of its meetings, together with the bibliography (including a digest of each article noted), furnishes an excellent picture of the aid rendered in France during the war by the science of nutrition. While abstract research has been largely laid aside, much work has been done by original investigators on such practical problems as military and civil rationing, the use and nutritive value of various types of wheat flour and substitutes for wheat in bread making, and the most efficient use of the meat, milk, and fat supply. Interesting attempts have been made to popularize knowledge of the general principles of nutrition and methods of adapting the diet to the changed food supply; in this the Société scientifique d'Hygiène alimentaire appears to have taken the lead, both by arranging popular lectures and by distributing popular literature.

HELEN W. ATWATER.

Material for Permanent Painting. By MAXIMILIAN TOCH. New York: D. Van Nostrand Company, 1919, pp. 208, figs. 7.

This work, although published some years ago, is worth noting, since it gives much information about the causes of deterioration in paintings, the proper methods of preventing deterioration, as well as information regarding pigments, dryers, varnishes, and other related facts. Some of the information is of interest in connection with paints used for household purposes as well as in connection with oil paintings.

BIBLIOGRAPHY OF HOME ECONOMICS¹REFERENCES OF TIMELY INTEREST TO HOME ECONOMICS TEACHERS AND HOME MAKERS IN CONNECTION WITH CLOTHING SELECTION, CLOTHING THRIFT, TEXTILE STANDARDIZATION, AND CURRENT LEGISLATION²*Government Publications:*

An analysis of the high cost of living problem. Grosvenor B. Clarkson, Director of the U. S. Council of National Defense. Council of National Defense, Washington.

Price Bulletins of the U. S. War Industries Board, Clothing Series—5 cents each.³

No. 5—Prices of clothing

No. 23—Prices of cotton and cotton products.

No. 24—Prices of wool and wool products

No. 25—Prices of silk and silk products

No. 26—Prices of hides and skins and their products

No. 27—Prices of hatters' fur

No. 28—Prices of hair, bristles and feathers

No. 29—Prices of buttons

Clothing for the family. Bul. 23, Federal Board for Vocational Education—15 cents.⁴

Materials for the household. Bulletin 70, U. S. Bureau of Standards, 25 cents.⁴

The removal of stains from clothing and other textiles. Farmers' Bulletin, 861, U. S. Department of Agriculture—free.

Selection and care of clothing. Farmers Bul. 1089. (Forthcoming)—free.

Miscellaneous Articles:

Some suggestions from the textile section. Miriam Birdseye, *Jour. Home Econ.*, September, 1919.

The partner at home. Same, October, 1919.

A plan of spending for the home. Pearl MacDonald, Same, December, 1919.

Putting over budget lessons. Janet Cation, Same, November, 1919.

Teaching the clothing budget. Janet Cation, Same, December, 1918.

Textile lessons for home makers. Grace G. Denny, Same, June, 1918.

A course in textile shopping. Iva L. Brandt, Same, December, 1919.

Household arts and the high school girl. Nancy Gladish, Same, November, 1919.

The problem of the high cost of living. Summary of report submitted to Congress by the Council of National Defense. (See above.) Same, December, 1919.

The new consumer. Mary S. Woolman, *Gen. Fed. Magazine*, September, 1919.

Dressing the school girl. Same, September, 1919.

How to choose clothes. *Literary Digest*, October 4, 1919.

World Situation in textiles. *Dry Goods Economist*. December 6, 1919.

Diversity in materials and diversity in prices. (Shoes.) Same, December 6, 1919.

Why a dye dyes. *Literary Digest*, October 11, 1919.

¹ Supplied by the committee on the standardization of textile fabrics.

² *Note:* No attempt has been made to list in this brief compilation the many helpful extension publications of the various State colleges and universities. Write your State College of Agriculture for the extension bulletins and mimeographed material on clothing subjects and budgeting now available. "Bibliography of Home Economics" (see last reference, page 140) contains a comprehensive list of Extension Publications.

³ Government publications for which a charge is made should be ordered from the Superintendent of Documents, Government Printing Office, Washington, D. C.

Printing on cloth. *Color Trade Journal*, September, 1919.
Economic basis of the dyestuff industry. Same, May, 1919.
Americanizing the dyestuff industry. *Textile World Jour.*, March 22, April 12, 1919.
Importance of the dye industry for the economic life of the American nation. *Color Trade Journal*, October, 1919.
American dyestuffs or national disaster. *Textiles*, September, 1919.
Misbranding of merchandise (Barkey Bill). *Textiles*, July, 1919.
Misbranding of merchandise (Barkey Bill). *National Clothier*, August, 1919.
British Merchandise Marks Act. *National Clothier*, August, 1919.

Trade Magazines:

The *Textile World Journal*, 334 Fourth Ave., N. Y. City.
The *Dry Goods Economist*, 231 W. 39th St., N. Y. City.
Women's Wear (Daily), 8 E. 13th St., N. Y. City.
Posselt's Textile Journal, Philadelphia.
Textiles, 79 Milk St., Boston.

Books:

J. B. Lippincott, Philadelphia:
Clothing for Women. Baldd.
Housewifery Balderston (Bedding, household textiles).
The Business of the Household, Taber.
Millinery, Tobey (about to be issued).
Clothing—Choice, Care, Cost, Woolman (about to be issued).

Macmillan, New York:

Textiles, Woolman and McGowan.
Textiles and Clothing, Waite and McGowan.
Shelter and Clothing, Kinne and Cooley.
Clothing and Health, Kinne and Cooley.
How we are Clothed, Chamberlain.

Scribner, New York:

Dressmaking, Fales.

Whitcomb & Barrows, Boston:

Household Textiles, Gibbs.

D. C. Heath & Company, New York:

Textiles, Dooley.

D. Appleton & Company, New York:

Sewing and Textiles, Turner.
The Study of Fabrics, Turner.

American School of Home Economics, Chicago:

Textiles and Clothing, Watson.

The Century Company, New York:

Garments for Girls, Schmit.

Bibliographies:

Annotated list of books relating to household arts. Teachers College, Columbia University—25 cents.

Valuable books and bulletins on home economics. Agricultural Extension Department, Iowa State College, Ames—free.

Home economics in high schools of Mississippi. State Department of Education, Jackson—free.

Textiles and clothing. The Library, State College of Washington, Pullman—25 cents.

Teaching home economics. Cooley, Winchell, Spohr and Marshall. pp. 420-442.

Bibliography of home economics. U. S. Bureau of Education, Bulletin No. 46.

NEWS FROM THE FIELD

A Conference on Natural Gas met in Washington, January 14, at the call of Franklin K. Lane, Secretary of the Interior, to consider possible economies in gas utilization and the mutual interests of the public and the gas companies.

In attendance were governors, public utility commissioners, state geologists, home economics experts, owners and officials of natural-gas companies, and appliance manufacturers.

Responding to the invitation of Secretary Lane the American Home Economics Association was represented by its president, Edna White, and the JOURNAL by Keturah Baldwin, the business editor. Several other members of the Association were there representing also other interests.

The common interests of the producer and consumer, including cost, necessary equipment, waste, and consideration of future use, were presented by Secretary Lane, George Otis Smith, director of the United States Geological Survey, Commissioner John S. Rilling, of the Pennsylvania Public Service Commission, and Director Van H. Manning of the Bureau of Mines.

Samuel S. Wyer of Ohio State University, in a discussion of importance to the home economics representatives, stated that 80 per cent of the natural gas used in the household is wasted; that, in the household range, by properly adjusting the gas pressure and the distance of the cooking vessel from the flame, 43 per cent of the heat energy could be utilized, and 73 per cent in a properly constructed natural gas furnace. He maintained that the most important factor in reducing this waste would be increase in cost; that so long as gas may be purchased at present rates no attention would be given to efficiency; that increasing the rate would not increase the ultimate cost to the consumer

nor income to the producer because of the greater economy practiced and the greater efficiency secured from the amount used.

A more extended discussion of the problems considered in this conference will appear in an early number of the JOURNAL.

The Home Economics Association of Philadelphia held its regular January meeting at the Widener Library, Thursday, the 15th, with the Dietitian's Section in charge.

The following talks were given on the various opportunities open to dietitians:

An Experiment in Settlement Teaching, Alice McCollister, Chairman Dietitians' Section, State Hospital, Norristown, Pa.; Acting as Health Advisor for the School Child, Ova C. Pendleton, Health Advisor, White Williams Foundation; Factors in Teaching the High School Pupil Home Economics, Ada Z. Fish, Director of Art and Home Economics, William Penn High School; How the Dietitian of School Luncheons May Increase the Pupil's Efficiency, Emma Smedley, Director of School Luncheons; A Nutrition Clinic for Children, Mrs. Gwendolyn S. Hubbard, Social Service Dietitian, Children's Hospital; Diet in Health, Sylvia Bayard, Consulting Dietitian, Child Federation; A Visiting Dietitian in a Municipal Court, Mary Loftus, Visiting Dietitian, Municipal Court; The Need of the Visiting Dietitian, Miss Frost, Instructor, Visiting Nurse Society.

The Dietitian's Section first met in November at the Pennsylvania Hospital. Mr. Miller of the Suaco Company gave a talk on detergents and soap savers.

Miss Gladwyn, Jefferson Hospital, was appointed to report, at the regular monthly meetings, current topics in the dietetic world.

The Section appointed an investigating and reporting committee on social service

dietitians in this city. As the first report of this committee a Round Table Discussion on Social Service Work was held January 29.

An Institutional Bureau. A hospital and institutional Bureau of Consultation has been organized at 284 Fourth Avenue, New York City, by Mr. Henry C. Wright, formerly of the Department of Charities, New York City. This bureau will be ready to give information on plans and equipment of institutions to be built, and also on the organization and operation of institutions already established.

"The purpose of the bureau is to make available the advice of the most competent and experienced persons on every phase of hospital and institutional plan, equipment, organization, and operation."

Notes from Kentucky. The Farm and Home Convention was held at the University of Kentucky, Lexington, January 27 to 30. The principal speakers on the women's program were Mrs. Henrietta Calvin, Mrs. Alice P. Norton, and Mrs. Ruth Reed. The High Cost of Living was the keynote.

The County Home Demonstration Agents attended a seminar during January. Instruction was given in Dietetics, Cookery, Clothing, Dairy, Poultry, Physical Education, and Extension Methods. In addition to the regular class work there were twelve lectures on special subjects including Literature, Pageantry and Rural Recreation, Music, Salesmanship, and Home Decoration.

Notes. At the Colorado State Agricultural College, the Experiment Station has assigned to the Department of Home Economics a budget that provides for full time salary of an investigator, and for expenses incident to the conduct of research work. Dr. N. E. Goldthwaite, with the rank of Associate Professor, is in charge of the Experiment Station work in Home Economics.

The next annual meeting of the American Dietetic Association will be held in New York City, October 22 to 26, 1920.

We are indebted to the Teachers College Bulletin, "Current Notes in Institution Administration," (Series 11, No. 7) for several news items this month. Those interested in institutional work should send to Teachers College for a copy.

The National Board of the Y. M. C. A., 600 Lexington Ave., New York City, is issuing an Economic Notebook, loose-leaf plan, that deals with housing, budgeting, and cafeteria work. This should be of service to those interested in problems of larger group living.

Fellowships in Social-Economic Research. Three fellowships in social-economic research, carrying a stipend of \$500 each, are offered each year by the Women's Educational and Industrial Union to women who wish thorough preparation for such work. Clerical assistance, equipment, and traveling expenses necessary for the investigation are furnished.

Application must be filed before May 1.

For further information, address Department of Research, Women's Educational and Industrial Union, 264 Boylston Street, Boston 17, Massachusetts.

Annual Meeting of the American Home Economics Association. Since the February JOURNAL was printed, the dates for the annual meeting at Colorado Springs have been changed to June 24-29.

Further notice of the meeting will appear in the JOURNAL as soon as the necessary arrangements have been completed.

Will every one who expects to attend the meeting send a postal card to the secretary, Miss Cora Winchell, Teachers College, New York City, as soon as possible, so that the committee may have some idea of the number of rooms to be reserved.

OMICRON NU

DELTA CHAPTER

Organization of alumnae chapter. The members of the Delta Chapter, in order to secure a relationship between the active and alumnae members, have organized an alumnae chapter. Early in the fall the active members wrote interesting letters to the alumnae members who were teaching in the State inviting them to attend a tea, during the State Teachers Association. Four girls from the Chapter went to Indianapolis to meet the guests. Our honorary member, Mrs. Henrietta W. Calvin of Washington, D. C., and twenty alumnae were present, who expressed their desire to form such an organization. Miss Lucy Wallace Wade, the Supervisor of Domestic Art in the Indianapolis Public Schools, was elected president, and Miss Francis McMahon of LaFayette was elected secretary. It was voted to make the meeting an annual affair, to be held on the Thursday of each State Teachers' Association.

Organization of home economics society. One of the Omicron Nu girls who attended the conclave at Albany, N. Y., came back with a desire to organize a society for every girl taking the home economics work, and through her efforts the plans were outlined. A committee was appointed to draw up the Constitution and by-laws which were submitted to the girls for approval and accepted.

The object of the society is to promote a better understanding of the scope of home economics, and to foster fellowship among the students. Approximately one hundred and twenty-five girls became members at the first meeting.

Only Sophomores and Freshmen may hold office; two Juniors, two Seniors, and one faculty member are on the Advisory Board.

The meeting on December 3, was in observance of Ellen H. Richards' day. The speaker was Elizabeth Miller of the University of Chicago, who holds the Ellen H. Richards' Scholarship.

BETA CHAPTER—NEW YORK STATE COLLEGE FOR TEACHERS

Our program for the year has been divided into three phases—educational, social, and financial, each of which is directed by two students and a faculty advisor.

For the educational work during the year the committee has planned a series of studies and discussions on the "Servant Problem," briefly outlined here: The home or family unit, its social and economic relation to the community; growth of family and service. Development of public service. Service—what it means and involves, principles underlying service. Can household service be put on a business basis? If so, what standards should be estab-

lished? Physiological and ethical side of service. Specialization in domestic service work, a place for it in vocational high schools. A suggested course of study for this vocation.

The social committee is making plans for a tea to be given for the home economics Freshmen. This is an annual event and one of the few opportunities for Seniors and Freshmen to become acquainted. During the New York State Teachers' Convention, which was held in Albany on Thanksgiving week, Beta Chapter gave a tea for the Home Economics Alumnae who were in town for the convention.

Beta has been most enthusiastic in making plans for raising money. We have made a forecast of the probable expenses for the year, and each member has assumed responsibility for her proportion of the expenses. Some of the girls have taken Christmas orders for plum puddings, fruit cakes, and orange marmalade; some are catering for dinners, luncheons, and teas; others are taking Larkin orders; marmalade and pickles have been made and sold. One afternoon a week we open a rest room to faculty and students, and serve tea, cocoa, or coffee, with wafers or crullers.

UNA VERMILLION,
National Editor.

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TEA ROOM MANAGEMENT FROM THE MANAGER'S POINT
OF VIEW¹

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The problems of those who choose catering to the public for their work in life lie very close to me. Years of business experience have taught me what these problems are, and how to solve some of them in a practical way. If I can be of help to you in putting the gist of what I have learned before you, I am indeed happy to do so.

It is a great pleasure to me to find college women seriously considering going into tea-room work. This is putting the work professionally where it belongs. This is recognizing the business of furnishing the public with food for what it is—a science. I am keenly conscious of the large contribution such women as you are capable of making to the profession of food-serving, and the demands of the public upon you will be proportionate.

In your laboratories you have learned the chemistry of food and its nutritive value. You have been taught scientifically how to combine foods and what are the right amounts necessary to keep the body well nourished. You have studied bacteriology. You know how to safeguard the public from the dangers in food that were never even suspected a generation ago.

You are women with trained, disciplined minds. We need such as you to think out our problems. For in the tea-room business, as in

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other business, there is no haphazard solution of difficulties, and college women are equipped to find the right solution without that waste of energy and time that hampers women with little or no scientific knowledge and no formal mental training.

You have been furnished with the theory and, beyond question, with some of the practice, but I take it that, in the nature of things, you know little of the "making it pay" side; that is, of the "cashing in" of your scientific knowledge.

However much and however good the training you have had in your college laboratories, the business field still remains an unknown world to you, and I would beg of you to still take with you, on entering it, the attitude of the learner.

This, first of all, is what the manager wants in a helper—a willingness to be told the problems of that particular business—for the problems of every tea room vary—a readiness to execute orders. Go into the field in a receptive frame of mind, and preserve that frame of mind until you are quite certain that that particular tea room has nothing more to teach you. By that time you will either be the manager's right hand—she cannot have too many—or you will be disassociated altogether from the enterprise.

Secondly, I would impress upon you that managing a modern tea room means exactly what managing a large home means. The most successful tea room is the one that preserves the atmosphere of a pleasant, well-ordered home. The more successful a manager in getting the home touch in the tea room, the better her management.

The competent manager of a tea room knows, first and foremost, how to merchandise food intelligently—how to get the right number of portions out of a given amount of raw material, and how to put the right price upon it when cooked and ready to serve. Knowledge of right purchasing, apportioning, and pricing of food is not all there is to tea room management, by any means, but I feel justified in saying that it is the rock upon which success is founded. Equipped with such knowledge you may operate a more or less successful business. Lacking an understanding of clever merchandising of food, no amount of ability to give your tea room an artistic and homelike atmosphere will compensate. These other qualities are highly useful as ciphers in the success total, but the integer is knowledge of merchandising the food. To stay in business you must create an income. To do this you must sell what you buy at a price that will cover the cost of its preparation, the over-

head, and something more for your profit. The amount of profit you should have is for you to decide. The selecting of raw supplies wisely and the merchandising of them are things to be learned only by doing them.

In this connection I should like to say a word about economy. Some of the simplest dishes are utterly spoiled by too close economy. If an extra pound of butter, even at seventy or eighty cents a pound, will put your product in demand, it is certainly folly to skimp on the butter or to use a substitute. Make a note that the best food will always merchandise the best. Buy No. 1 quality. The best is always the most economical.

I would advise any girl going into tea room work to first determine that that is the one work she wants to do and to begin by taking a position in a popular and successful tea room. This will contribute to getting a right balance established in her mind between theory and practice. Just what the position should be does not matter half so much as some girls think. From any part of the tea room you can get a fair start, and gradually acquire a knowledge of what is going on throughout the whole establishment. If you do not go in with too exalted an opinion of your attainments, but rather with the spirit of a pupil, you will be surprised to see how much you can learn about methods in a short while.

Be open-minded, tolerant, and patient. You will come in contact with people of all sorts. They will not know what you are there for, but you will, and that should help make you more patient. You can learn a great deal from other employees who may not have had any of the academic advantages you have had, while you, no doubt, are teaching them much through the quiet force of personality. Let it be such, and not definite instruction. You are there to find out how things are done by other people, and what is the secret of that particular tea room's success and popularity. I make a point of this simplicity of attitude on the part of the newcomer, whoever she may be and however much her technical training, because my experience with domestic science graduates has been that their weakness seems to lie in an inability or unwillingness to adopt the apprentice's point of view even temporarily. I have taken domestic science graduates into the tea room, at their request, because they wished to learn how things were done there, but when I have detailed them to do certain work, along with the regular helpers, they have felt themselves slighted. The work, they have told

me, was not worthy of their abilities. If you are not willing to carry out instructions, in order that you may know how things are done, or demonstrate how they are done, before asking others to do them, your success will be deferred until that adjustment takes place within yourself.

Selecting help is an important part of the work. After finding your people you must train them to your methods and set the pace for them. They are quick to appreciate justice, even if the decision goes against them. As manager, you must adjust yourself to your employees, and give them the work that will bring out their best abilities, raise wages when business warrants it, and in every way try to make them feel that your success is their success. In other words, there must be coöperation.

It is the patron who makes the business. This should be constantly impressed upon your helpers. Give them the slogan: "The guest is always right," that is, he must be treated with the utmost courtesy. Patrons will not seek a tea room unless value is obtained there. While the appearance of the place has a great deal to do with attracting people, they will not pay for "personality" and "atmosphere" alone. They come primarily for food, good food, well cooked, clean, and well served.

A word here about the number of employees required to man a tea room might not be amiss. For an establishment serving two meals to between 500 and 600 persons a day, a first and a second meat cook will be required; a vegetable cook; a pastry cook; two pantry girls who will have charge of salads, sandwiches, ice cream, and beverages; two dish-washers; one glass and silver cleaner; one pan washer; one scrubwoman, who will prepare vegetables and clean iceboxes; two laundresses; one porter; nine waitresses; and one cashier.

From your place of employment in the tea room, whether it be helper in the kitchen or manager's assistant, you will note very soon that the matter of the size of portions and their prices plays a highly important part in the day's work, and that in a given tea room, a certain ration is consistently maintained throughout the menu in this respect. Later, you will learn the ratio of prices charged for the prepared food to the market cost. There is a rule for all of these things. For example, it will not take you long to discover how many slices must come out of a loaf of sandwich bread of certain dimensions, and how much sliced or minced ham or sliced chicken a given number of pounds of meat must afford; how many slices of roast beef a full sevenrib roast must yield, and how the price must be fixed; what the soup is to cost per person, the salad

per person; into how many portions a turkey should cut; how many orders one should get out of a case of asparagus, a bushel of potatoes, and so all the way down the menu.

Such points as these can best be learned by adding to your school training a course of experience in a successful tea room.

Being a manager, I said, comes to pretty much the same thing as running a home on a large scale. This holds good whether you are in a small tea room or the largest hotel in the world. It is what the public is looking for. There is nothing the public appreciates so much as hominess and there is nothing so subtle. Herein lies one great attraction of the work. There are no end of delightful touches that a woman may give to her establishment that reflect herself. I want to stress this point particularly. Your output will be a reflection of what you are, of your capacity for work, your ideals, and your imagination and temperament. This is inescapable. Catering is service. If you have the true spirit of service, you have a splendid start for success in business. If the spirit of service is not found in the head of the establishment, it is usually not found in the employees, and the atmosphere reflects the true situation.

Managing means much testing and tasting, time, thought, hard work—and no wasting. You must be at your business early, and you must stay at it late. You must never let your helpers forget that you have a right to know everything that is going on, both in the kitchen and at the desk. You must be uncompromising in your daily inspections, and you must make your aides understand that you exact from them the best service of which they are capable. Laxness—the bone of too easy success—will not creep in if you maintain this vigilance. Supervise diligently as to cleanliness, order, and the general deportment of employees. Be direct in your orders but be sure that they have been well thought out.

Catering is a delightful occupation, once the public has learned to trust you. You can gain their confidence by giving food cooked in a cleanly, appetizing manner, served in a homelike way, and priced consistently. By consistently, I mean with due regard to the cost of its preparation, asking neither more nor less than is fair to your business. Volume of business is the goal to be sought, though too much must not be sacrificed for it. There is no work in which a woman can realize more in money returns for her scientific attainments than in this kind of work. Nor is there any work for a woman more fascinating.

I should advise every woman who takes up a profession, whether it is a tea room or something else, to have a hobby. We are prone to stick too closely to one line of work, and this is not good. Ride horseback, play golf, do something to amuse yourself in your leisure hours, and have leisure hours which must be respected. By getting away completely from thoughts of your work at intervals, you only strengthen your grip on the work. Have a hobby—something that will take you away mind and body from too close confinement to your main line of occupation. It will make you richer and more capable, rather than detract from your business worth.

Closing this article is hard—for it is, as you see, an all engrossing subject to me. But let me leave this parting word with you. The price of success in this work is costly, but perseverance will crown it adequately.

A STUDY OF WOOL FABRICS¹

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As a partial fulfilment of the requirements for the M.A. degree at Columbia University, I made, during the spring of 1917, some investigations of the various qualities of wool fabrics in general use for garments for women and children. Since that time the interest in these fabrics has not decreased; indeed it has steadily increased as the supply of wool has lessened and the price of wool, along with the prices of every thing else, has greatly advanced. The editor of the JOURNAL has asked me to summarize the conclusions drawn from the results of the tests.

The investigations were made under conditions which insured the same kind of scientific accuracy that is required in the departments of chemistry or engineering, and the conclusions were approved by the heads of the departments.

For these tests, twelve samples each of five kinds of wool fabrics in common use were included, namely: white or baby flannel, ranging in

¹ It was not possible in the JOURNAL's limited space to publish the tables that were included in the original report, but arrangements may be made for the loan of the paper, through the JOURNAL Office.

price from \$0.45 to \$1.10 per square yard; broadcloth, \$0.77 to \$2.33 per square yard; suiting for suits for men, women, and children with price range of \$0.66 to \$2.35 per square yard; serge for dresses at \$0.80 to \$1.19 per square yard; and, lastly, miscellaneous fabrics used for various kinds of garments at \$0.64 to \$1.42 per square yard.

None of the samples were of fancy, or "stylish" materials, but were of the general class which might have been found in shops all over the country at any time during the previous five to ten years. There were ranges in qualities as varied as the ranges in price.

The samples were tested for shrinkage, tensile strength, percentage composition or amount of wool and cotton present, the number of yarns to the square inch, and the weight per square yard. From these tests, there may be drawn some practical conclusions which are valuable for the purchaser of such fabrics.

The best wool fabrics show a good deal of elasticity and resiliency. The yarns should pull apart, never break off even, as do those of cotton. These two qualities will prevent easy tearing, and give conformity to the curves of the body, the latter conserving the heat. Many all-wool fabrics may lack these properties because of the quality of the fiber used, or because of faulty manufacturing processes. If a fabric seems stiff, examine carefully the individual fibres for stiffness and for harshness, due usually to the use of strong chemicals. Again, those samples which stand the greatest direct strain, but lack resiliency, soon lose their shape. In a garment from such fabrics, the results vary all the way from sagging side and back seams with a front elevation to exceeding bagginess over the knees. No matter how well cut a coat or skirt may be originally, the comfort is all gone when the garment loses its "hang," or gets baggy in any part. Very often the presence of cotton in large proportions will cause this difficulty in garments with long seams. With smaller garments, for school girls for instance, this objection does not hold to any great extent. Such dresses clean easily and look well enough for the purpose. Very few girls can wear a dress more than one season, because of their constantly increasing growth. The less expensive fabrics are therefore most excellent for such purposes. Such fabrics may be purchased in good designs and coloring.

A small amount of cotton, up to 10 per cent, is no great disadvantage in white goods, if the price is right. Indeed it is advocated by many experienced, intelligent purchasers. However, in colored goods, especially those of dark color, the cotton may not hold the dye, as all dark colors tend to be fugitive on cotton.

The shrinkage presented one of the most interesting problems. From a study of the samples there seem to be three principal factors which make for shrinkage. If the fibers are quite curly, the fabric shrinks even under the most favorable circumstances. If the fibers are not fairly well combed, even though relatively straight, there is considerable shrinkage. If the fabrics are woven quite closely, that is, if the yarns are quite near each other, there is much matting of the serrations. This is increased if the yarns lack twist, or have not been well spun.

In garments for infants' use, shrinkage is a great disadvantage because of the board-like character the fabric assumes after a few washings. The skin of babies is tender, the least harshness causing undesirable irritation and consequent ill effects. There is another disadvantage not to be overlooked. With much shrinkage, a garment quickly becomes too small—an economic dead loss.

The shrinkage in the other fabrics was not very noticeable nor significant, except the very cheap broadcloth, which lost 25 per cent in size and faded miserably.

The prices were almost always directly proportional to the value. Those fabrics which had good color, good finish, and kept their shape, were in every case in the middle or upper class of prices. Some of the fabrics which were purchased in stores where the appeal is to a sense of real worth, not style or finish, were medium or low in price, and showed high counts on every point. It would seem to indicate how advisable it is for a woman who must really economize to go to one of the less exclusive shops to do her buying, although she should compare prices and values with those in the style-setting shops.

HOW AN EIGHTH GRADE CLASS MADE THEIR OWN COURSE OF STUDY

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The scene is laid in a sewing laboratory. Eighteen eighth grade girls were filing in for the first sewing lesson of the year. As the class came to order the teacher said, "I am glad to see so many of my last year seventh grade girls here, and to welcome the three new girls. From your faces I judge there is something you want to talk about right away. What is it?"

"What are we going to make first?" was the chorus of replies.

"Well," replied the teacher, "that is interesting for it is exactly what I want to talk about too. What *do you* want to make?"

A number of garments were mentioned and the teacher wrote the list on the board. It included dress, petticoat, bloomers, nightgown, drawers, and "teddy." As some of the garments were named comments by other members of the class were heard, such as,—"You can't make a dress, you don't know enough," and, "My mother won't let me wear a 'teddy.'"

As the teacher completed writing the list she said, "Now girls, there seems to be a difference of opinion about what we are to make, but as I think it over it seems to me that we have to decide two points: first, would it be possible for each girl to make any garment she chooses; second, how shall we decide which garment to make. Let us take the first question. What do you think?" Several hands went up and the teacher called on Helen who replied, "We don't know enough to make some of the articles named, especially the dress."

The teacher replied, "We could plan a simple cotton dress but it would take a number of weeks to complete it and that would take us into the time of the year when you are wearing wool dresses and if you waited until next summer to wear it, what would probably happen?" The girls looked at each other and laughed. One answered, "Well, I don't think I would be able to wear it if I grow as fast as I did last winter; why I didn't have a thing I could wear last spring."

"Are there any other reasons why we cannot all make separate garments?" asked the teacher. Again the hands went up and the teacher called on Marguerite who said, "I should think we would have to wait a good deal for help if we did that."

"That is perfectly true for there are eighteen girls in the class and only one teacher, and even if I worked very fast I could give each one only a few minutes time. We have only seventy-five minutes for a lesson and if you divide that by eighteen you see it gives about four minutes to each girl. We would surely save time and really accomplish more if we could plan something every girl would like to make and so have class instruction. Shall we try to plan it that way?" Replies of "yes" and nods of heads decided the question.

"Now," continued the teacher, "about the second question. How shall we decide which garment to make? Shall we just choose any garment or can you think of something that might help us decide on one or two particular garments? Think carefully a moment."

The girls looked thoughtful but no very satisfactory reasons suggested themselves. One girl finally said, "I wish I could use some little things that are in the machine drawer. I saw Gladys using a funny one the other day when I came in to bring you the note from Miss H——."

"You mean the attachments on the machine," replied the teacher; "the 'funny one' you saw Gladys using was the tucker. I certainly see no reason why you cannot use the tucker if you wish, provided, of course, that the garment you choose to make requires tucking."

This reply started a perfect avalanche of "oh, may I's," and after a bit of discussion the teacher said, "I am wondering, girls, if you have not found the answer to our question of how to decide which garment to make. Suppose we make a list of the things about sewing that you already know and a second list of the things, like the tucker, that you want to know more about and then see which garment will give the most experience and practice. Do you think that a good idea?"

The idea apparently found favor from the rapidity with which the replies were given, and the teacher had a hard time writing fast enough to keep up. The first list, helped out by a question or two on forgotten points, was about like this:

What the girls already knew: *Sewing*—basting, hemming, threading and plain stitching on the machine, names of parts of machine, French seam, button-hole (more knowledge needed), turning a hem and stitching it. *Textiles*—meaning of the terms bias, selvedge, lengthwise, crosswise, filling, warp; ability to recognize gingham, percale, and toweling, to recognize design as made by the use of dyed yarns (structural design), to recognise design as made by printing (applied design), to recognise plain weave.

The second list was much more difficult to make than the first, since the girls were not always able to name the work about which they wished to know. The teacher began by using the fact about the sewing machine which had already been mentioned and then called for more requests. A few suggested by the first list were given readily, but on this very account they were in the nature of a review such as "more about seams, straighter stitching on the French seam, and more work on button-holes."

"Try to remember how the clothing you have on is made and I am sure it will give you ideas," said the teacher; and it did, for "how to make plackets," "how to gather and put on a band," and "trimming" were the products. When trimming was mentioned the teacher asked, "How many kinds of trimming can you recognise if I show them to you, and of how many can you tell me the names?"

Lace was the only one of which the girls were sure and, like "Pigs is Pigs," there were no distinctions even in that. The teacher named several kinds of laces and several types of trimming with the result that the girls wanted to be able to recognise at least three or four.

Again there was a pause and the teacher suggested, "Last year you made aprons and before we started them we studied several materials to discover which one was best suited to the purpose. Could you use those materials, gingham or percale, to make a nightgown or "teddy?" The very idea! Of course it would be necessary to find out about the right kinds of cloth to be used for nightgowns and it developed that several girls had heard their mothers ask for longcloth and one girl had heard the word "nainsook." Said the teacher, "When you go into the store for the material what else must you know besides the name of the goods? Mary may answer."

"I should want to feel of it to see if it is thin enough."

"Yes, you will study the quality first, and having made your choice, what next?"

"Tell how many yards I need," replied Mary.

"How many yards are you going to ask for and how will you decide?" asked the teacher. Mary was unable to answer so the question was passed to Dorothy who replied, "I should think you would measure as we did for our aprons."

"Oh, we have to have a pattern and measure it," exclaimed two or three at once.

"Oh, can we use one of the patterns that come in an envelope like my mother uses, instead of the brown paper patterns we used for our aprons?" asked a girl who had been sitting quietly and without much apparent interest.

"We surely will," replied the teacher. "Can you tell us how the pattern your mother uses differs from ours?"

"It is made of tissue paper and has little round holes in it," replied Thelma.

"The tissue pattern is usually spoken of as the commercial pattern and the 'little holes' are the perforations that tell us how to place the pattern on the cloth for cutting," remarked the teacher adding pattern to the list of desirable knowledge and then writing the words commercial, pattern, and perforation, on the board and pronouncing them again as she wrote them.

"You girls probably do not know," she continued, "that patterns are made in what is called 'sizes' and each size carries with it a certain set of measures. Now while the measures are very carefully taken for each size and the patterns do fit very well indeed, yet, because people vary so much in form it is always necessary to take one's own measures and test each pattern before it is used. So I will add these points under patterns. Once, when I was in New York, I visited the great Butterick Building and saw how the 'Delineator' patterns were made. Some day when we have time I will tell you about the wonderful things I saw there. Well, this begins to look like a pretty big task, let us run over it again to be sure it is just as we want it."

The second list, telling what the girls wanted to know: more about the machine appliances; more about seams—(reviewing French seam to improve stitching), a new seam flat fell; more work on button-holes; how to put on trimming; to be able to recognize three or four kinds of trimming; how to gather and put on a band; how to make a placket—continuous; about patterns—what the perforations mean, how to order, how to test the size; more about cloth—another kind of weave, the names of more materials, ability to recognize them.

"Now," continued the teacher, "let us go back and think about the garment we are going to make and see what we can learn on the garments we have here in our list. Which one do you want to discuss first, since we have crossed out the dress?" Two girls mentioned the "teddy."

"Can you girls all use a 'teddy?'" asked the teacher. "Someone said a while ago that her mother would not let her wear one, who was it?"

Oh, Marion it was you, do you know why your mother objects to the 'teddy?' "

"Well, Mother says I can wear them when my dresses are longer, but now I have to wear bloomers because I run so much and mother says they look better under my dresses."

"That is what I suspected for I have heard other mothers say the same thing. Suppose we leave the 'teddy' for a few minutes and look at the bloomers and nightgown and see what we can learn on those two, and if the two girls who spoke of the 'teddies' still want to make them perhaps we can compromise. Here is a pair of bloomers I have borrowed for you to look at. What kind of seams are used?"

As the class mentioned each point in the construction the teacher wrote it on the board and then said,

"Well the bloomer is a pretty good garment to work on, I should judge, for you see how it fits into our list, flat fell seams on the leg, French seam on the body, hems on the bottoms of the legs and elastic to make it fit at the knee, two plackets, one on each side, two belts, a curved yoke belt in front to take out some of the bulk and to make it fit nicely, and a straight one in back. And see all the button-holes for practice too."

"But," objected one of the girls who had asked about the teddy, "I want to use the tucker and there are no tucks on the bloomers."

"And there's no lace trimming either," added another.

"No, that is so, but let us see about the nightgown, could you make tucks on that; and how about the trimming, couldn't you make and trim a nightgown in about the same way that you would a 'teddy?' How do you like this one?" She held a dainty garment up to view. Exclamations of pleasure were expressed by many of the girls and Marion asked, "Did you make that, Miss Black?"

"Yes," answered the teacher, "and I see no reason why you girls cannot make one even prettier."

"Now," she continued, "we shall have two lessons a week this year instead of one lesson a week which we had last year, and I think we can make two garments. What do you girls think about the bloomers and nightgown? Can you make use of both? With a few exceptions the girls said they could, and asked which garment was to be made first.

"That is for you girls to decide, but remembering the time of year (September) and the fact that it will take several weeks to make either, which would be most useful and which would you need first?"

The bloomers were decided upon as the first problem and the teacher continued: "It is just time for us to close. Will the three or four girls

who were not sure about needing bloomers ask their mothers about them and see me before the next lesson? By the way, what do you think we ought to do next lesson?"

"Practice on the machine," "buy our cloth," "start practice on the button-hole," were some of the answers.

"Yes, I think we can do at least two of those things, review the machine and the French seam and find out about suitable material for the bloomers. Now it is time to dismiss until tomorrow."

As the class filed out the teacher seated herself at the desk and picking up a paper began to compare an outline which was written upon it with the outline of sewing the girls had helped to plan. Running her pencil down the list she paused at "machines" and read "How to set a needle."

"No," she mused, "there did not seem to be a good place to bring it in but with a little judicious carelessness I think I can make it necessary."

Again she paused at the two headings marked Health, and Art Principles, and addressed them: "Poor old fellows, so you did not get asked in. Well you know it would have been bad manners to have dragged you in by the hair of your heads, and any way after the careless manner in which you have been used in the past by people who did not think as highly of you as I do, I doubt if you would have survived. However, if you will call again at the "psychological" moment, I think you can safely count on being invited to enter."

Just at this moment the eighth grade teacher entered and said, "What are you talking to yourself about?"

"My eighth grade class have just made their own course of study for the coming half year; there it is on the board and here is the one we planned last spring. How do you think they compare?"

The teacher compared the two as indicated and then said,

"But I still do not see the idea. Why did you ask the girls to make their own course when you had already decided upon it?"

"Well, I have thought for a long time that I should like to see how my own plans would coincide with the ideas of the girls themselves. It seems to me, too, that I shall be meeting a 'present situation' and 'making subject-matter meet the needs of the child,' and helping them 'to solve real and vital' problems when they have themselves made a 'present situation' by recognizing and telling me of their needs and wishes. Mastering the use of that tucker will be a 'real and vital problem' all right if they are to make tucks on their nightgowns, and as for wanting a nightgown, well if you could have seen their eyes you would not doubt their interest. It seems to me that we already have 'motive' enough to

run us through the entire term without stimulating any more. Why," laughingly, "I believe I can even furnish motive for some special reading with you, for of course the girls are going to be interested in finding out something about the people who make the ready-to-wear garments like those we are making."

"It certainly sounds interesting and I shall gladly do my share to help out in the reading. I suppose you have the Consumer's League material in mind?"

"Yes, that and possibly some other reading such as the Geographical readers of Allen, McMurray, Keller, and Bishop. What do you think about them?"

"I am sure they will be useful, and I will take an hour any day after school to go over them with you."

"All right, that is fine; let us plan to do it next week."

FARM LIFE STUDIES AND THEIR RELATION TO HOME ECONOMICS WORK¹

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The life side of the farm home will be one of the research projects in Farm Life Studies in the Office of Farm Management, just as the physical basis of the farm home is at present one of the subjects of investigation by the Office of Home Economics in the States Relations Service. Farm Life Studies will not undertake to explore the technical aspects of food, dietetics, clothing, household equipment, household work, or household management of the farm home, but will be concerned primarily with the state of mind of the members of that home. Farm Life Studies will give attention to the social situations facing farm life and the consequent problems arising in the home. While home economics work, on the investigative side, is concerned mainly with the physical basis of the farm home, Farm Life Studies will be centered on the analysis of the social elements in the farm home situation.

¹ Read by title at the Twelfth Annual Meeting of the American Home Economics Association, Blue Ridge, N. C., June, 1919.

An analysis of household situations, neighborhood situations, and community situations in such a way as to display the states of mind of the people concerned should assist in the wholesome adjustment of all sorts of human relationships on the farm. The farm home, for example, may be out of the general current of present day life, having little to do with the thought and activity of the world at large. The life of the home consequently may be so simple as to be too simple. The wants of the members may come to be so belated and backward that the home will fail to see the value of an expanded physical basis for its life. Publicity of the causes of farm home isolation should tend to remove this isolation and enable farm homes to participate in the current of affairs, making it easier for all to raise the standard of physical life on the farm.

Farm home life is peculiar in the fact that, as at present organized, it involves an economic partnership of the man, the woman, and the child. This partnership, moreover, frequently reaches its maturity only when the farm itself passes from the hands of the man into the complete ownership of the child who, by that time, will have reached manhood. The social situation of the farm home, therefore, in many cases constitutes a family cycle which is a little larger than the unit usually accounted as a home. The grandfather and grandmother, the father and mother, the children, make up this family unit, even though living in two separate houses. The farm, owned by the grandfather, is apt to pass from entire management by the grandfather through the several stages of management by the son, tenancy by the son, possibly part ownership by the son—all within the grandfather's life. Farm Life Studies will observe carefully this family cycle and situation; studying the child as an apprentice to farming; as manager for his father; as tenant of his father; as owner with his father; as complete owner. It will study the retreat of the father from the farm as his energy wanes; as he gives over his farm by degrees to his son; as he finally retires from farming to the town or to a house on the land.

Farm Life Studies will observe the spiritual rôle of the woman in the home as the interpreter of one family (her own) to another (her husband's) and of her children to their father, and the father to his children. The rôle of the child as the bringer in to the family of the things of life which are new will not be overlooked.

The use and distribution of leisure on the part of members of the farm home will be studied. Diaries are already available showing just

when this leisure comes in the day at the different seasons, and exactly what has been done with the leisure.

Certain social aspects of the location of the farm house will be included in our study. The farm house has too frequently shunned even the roadside, going back into a field for its site. The stream of life meanwhile moves along main roads. The question of the social value of location on residence roads and the social detriment of location on back roads will engage our attention.

Such home questions as the following will also be considered in Farm Life Studies:

Is home-making on farms popular with superior country-bred young women? If not, why not? If so, in some localities and not in others, what are the reasons?

Are young men, of a superior type, especially after some educational advantages, attracted to farm life in open competition with other occupations? If not, why not?

What is the distribution of time among tasks of the household, farm work, and leisure in contented farm homes?

What is the relation of the man, the woman, and the child to the farm income in the intelligent, contented farm home?

Do the woman and child participate in the management of the farm in the intelligent, contented farm home?

How are the necessary unsightly parts of farm work screened from the view of the farm house on farms where beauty is organized into farm home life?

The Division of Farm Life Studies seeks to assist the various departments of rural life work by a careful exploration of the social aspects of all phases of farm life, and to coöperate to the full with all those at work upon one phase or another of agriculture or of home life in a common task.

THE PHYSICIAN AND THE DIETETIAN¹

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It may be truly said that a hospital kitchen without a dietitian is like a locomotive without the engineer. There is plenty of food in one case and plenty of steam in the other, but the energy in them is wasted unless properly directed. A locomotive with an engineer and a fireman is an efficient instrument of service, but they need an organization higher up in order to properly serve the public. In the same way a hospital kitchen plus a dietitian is an efficient instrument of service, but needs, in fully as great a degree, the intelligent staff of physicians in order to serve patients properly.

In the past a great many hospitals have been run without dietitians. In such a case the physicians or the hospital superintendent did the work of the dietitian, or too often it was left to an untrained cook.

We are glad to be entering this new era where the physician may have the intelligent coöperation of the trained dietitian. In well organized hospitals today the physicians cannot adequately administer this work without help. Dietitians are or should be trained to give this help. They bear the same relationship to the physician as the pharmacist does. They fill the prescription. But success requires a great deal more than technical training. The successful pharmacist does not just throw the ingredients together. He prepares his drugs carefully, compounds his prescription accurately, and then dispenses it as tastefully and neatly as it can be done. He must also exercise economy. The same thing applies a hundred fold to the dietitian. Food represents calories, but should not be served as such. Economy, care in preparation, both as to quality and balance, and serving are the important things to consider. A dietitian is selling goods in the same way that the pharmacist is and she must sell service as well.

For a long time the dietitian was accepted rather reluctantly by the hospital board of trustees. The hospital dietitian had rather to force her way along and prove her worth. She has not always made good, so that her employment has often failed to produce the good results

¹ Presented at the meeting of the Institution Economics Section of the American Home Economics Association, Madison, Wis., June, 1919.

that it should. Her failure is not always her fault, for hers is not an independent profession. Coming into the hospital organization under sufferance, having to prove her own value to the hospital, she has seldom been given the power necessary to develop herself and the job as it should be done. Without broad power, her function resolves itself into the work of preparing special diets, which, to be sure, is important and necessary work, but work which is after all restricted to a small number of patients.

There has been further difficulty in the path of the dietitian in the failure of the hospital staffs of physicians to impress upon the trustees the necessity for conferring broader power on the dietitian. This coöperation between physician and dietitian is manifestly impossible in all hospitals in which there is no unified medical and surgical staff. Therefore in many small hospitals the proper sphere of action of the dietitian is greatly restricted and hampered. A hospital cannot be efficient in this respect without a unified staff. The dietitian and the medical staff are responsible for the hospital dietary. When we consider that the average daily cost per patient in a modern hospital is from \$3.50 to \$4.50 a day, and when we realize that fully one-third of this sum is spent for food, we can see that this divided responsibility is a highly important factor.

The medical staff and the dietitian are responsible for one-third of all hospital expenses. As long as people are unwilling or unable to pay hotel prices for hospital care, it may be impossible to cater to patients' individual tastes to any degree. The result will be that the vast majority of patients must have served them a standard diet. In a city of mixed population, one can readily see how difficult it is to serve foods equally suited to separate individual tastes. It would be ideal if the American people could have a standard American diet. After many centuries of education, we shall probably work out such a Utopian idea, and then the hospital dietitian's path will be simplified. At the present time we have to take the situation as it is, and, in order to do the work well, the unified medical staff should meet with the dietitian and plan a few standard diets, just as few as possible. These diets should be based on principles of nutrition and, as far as consistent, on accepted *habits* of eating. It is of the utmost importance often that people's habits should not be suddenly interrupted. When these standard diets are compiled, they should be issued to the medical staff so that they could all coöperate in simplifying the work and avoiding waste.

As I look upon it, the success of the dietitian of any hospital lies in her having broad power, in her being well-trained technically and also as an administrator, in her being a person of common sense, and in her having the definite coöperation of a unified medical staff. What makes her so often a failure today is this lack of direction higher up.

The profession of hospital dietitian should be one of indispensable benefit to modern medicine as well as to modern hospital organization. The food problem of a modern hospital is as difficult and as important as any problem which the hospital trustees have to face. It is one which will require all their business acumen to solve. Too many hospitals in the past have been run on a diametrically opposite plan from that of the successful hotel, whose motto is "The guest is always right." The attitude of many highly organized hospitals often seems to be "The patient is always wrong" or "Take what you get and be thankful and cheerful. Don't express an opinion. Patients shouldn't have opinions." The hotel plan proves a financial success; the hospital plan is almost always a financial failure. There are, of course, many other factors which contribute to this failure, but there are also factors which should partially, at least, counterbalance them. The hospital gets a lot of its most expensive service gratis.

It is the business of the dietitian, the medical staff and the trustees, to work out a successful compromise between the hotel plan which is a success and the hospital plan which is a failure. We ought to work out something which will at least enable us to come out even and which will be a great improvement upon the imperfect system that exists in many hospitals today. I firmly believe that some patients in hospitals ought to have a menu privilege. This would not necessarily add to the work and it would add enormously to the attractiveness of a place that had all too few attractions. We are still combating the old idea that the hospital is the place to go when you are going to die, not the place for the best and most comfortable treatment,—and what is still more frequently heard and something that cannot always be refuted is, "I would go to the hospital but you can't get anything to eat there."

The problem of the best management of a hospital dietary is still an unsettled one. But one can readily see that the dietitian is the keystone in the arch. She is the go-between between the physician and his patient. She occupies a position that requires more than good training. It rests upon a thorough understanding of food principles,

upon a practical knowledge of cooking, upon thorough-going common sense and good administrative ability as well as tact and enthusiasm.

There is another type of dietitian, however, whose importance is not recognized and whose sphere of action is at present limited, and that is the nurse qualified as a dietitian. The time is surely coming, I hope, when people who command \$25.00 to \$35.00 a week will be even more highly-trained than they are today. Nothing will ever justify the present exalted position of the nursing profession or put it on its proper footing until it adopts the academic standard.

The opportunity for service and the emolument of nurses should immediately demand this step. Every trained nurse should be enough of a dietitian so that she could fill dietary prescriptions at the patient's home as well as the pharmacist does a drug prescription. The future of the nurse as dietitian in the home will be an increasingly great one. Do not think for a moment it is lowering the dignity of the dietitian. It would be raising the profession of nursing.

As with any new profession like that of dietitian, it takes a generation or so to get it properly adjusted in its niche. Practical details can only be worked out through experimentation and finally perfected. All this takes time. Meanwhile the stress is apt to be put on the theory, and if I were to make a criticism it would be to say just this, that the training today is overloaded with the theory of metabolism and nutrition, and perhaps too little attention paid to the perfecting of practical details of the hospital dietary. The science of metabolism is also young and what seem to be facts today are fable tomorrow. The treatment of metabolic disease is only a very small part of medicine, and, though an important one, occupies, I feel, an exaggerated place in the training school today.

What we need is the recognition by hospital trustees that the dietitian is not only necessary to the physician but pays her own salary many times over in the more efficient and economical management of the hospital kitchen. Physicians are every year more eager to welcome her as an indispensable and permanent agent in the organization of modern medicine.

POSSIBILITIES IN HOME ECONOMICS WORK

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If the average of all salaries paid to home economics workers could be known, the figure would probably be small. This is because the majority of positions are in school work where the pay for all subjects is notoriously low. Moreover, many important colleges and universities have not yet felt the necessity of raising the salaries of the home economics staff to the maximum allowed for each grade. In spite of these facts, however, those familiar with the entire field of home economics have for some time been aware of an upward trend in salaries. The opportunities outside of the teaching profession have been increasing in number, variety, and salary, and this fact is beginning to have its effect on the salaries paid in colleges and universities, especially for positions involving administrative work.

This opinion is borne out by the data here presented. They were obtained from voluntary replies to questions sent by the Office of Home Economics to a limited number of exceptionally well-informed workers in home economics. They make no pretensions to giving accurate information regarding the entire field, and are given here merely as an interesting indication of the probable trend of things in home economics work outside of high and elementary school teaching and Federal employment.

In tabulating the information the positions were grouped as: Teaching and administrative work in Colleges, Universities, and Technical Schools; Managerial; Dietitians; Commercial; Journalistic; and Miscellaneous. The positions were classified according to the names given them by the informants; for example, work reported as managerial was grouped as such even when it might as well or better have been classed as commercial. Three hundred and ten individual positions are included in the report. The total range of salaries is from \$700 to \$10,000.

The tabulations for the different groups are on file in the office of the JOURNAL. The information furnished by them may be summarized as follows:

College and university positions. These call for from 8½ to 12 months of work per year. The pay ranges from \$800 to \$5000; \$7000 is a possible figure in one university, though this amount has never been given

in actual practice. In the lower paid positions, such as instructors, board or room, or both, are sometimes provided in addition. In the higher grades, as for heads of departments, the positions often involve administrative work, either with or without teaching. The average figures for different grades of work run from \$1066 for assistant instructors to \$4067 for deans; the latter figure represents a small number of "picked" institutions and is doubtless considerably higher than a complete average for the entire country.

Technical school positions. The salaries paid range from \$900 for an instructor or teacher to \$2850 for a head of a department. The average salaries for the different grades run from \$1367 for instructors to \$1950 for heads of departments.

Managerial positions. This group includes institutional managers, both resident and non-resident; managers of cafeterias, tea and lunch rooms, and club dining rooms; and the so-called managers employed by commercial firms to introduce food products or household equipment. The salaries range from \$720 to \$5000. Board and lodging are almost always provided in addition in case of the very low salaries. When the work involves travel, additional allowance is usually made to cover the actual added expense, but such allowance does not necessarily compensate for the probable wear and tear of the manager's health and personal belongings. One manager earned \$400 in addition to her regular salary by teaching institutional management. The average salaries in the different groups of positions here included ranged from \$1656 for institutional management to \$5000 for the commercial positions.

Positions as dietitian. Salaries ranged from \$700 to \$4000. This minimum is the lowest reported in this study, but, as in managerial positions, board or lodging or both were frequently allowed. In some instances one month vacation is allowed, in others monthly increases of \$10 after the first three months. The average salary for the different types of positions ranges from \$990 to \$3500. This minimum represents army dietitians and includes a monthly war bonus of \$20; in addition they receive maintenance estimated at \$62.20 per month. The maximum includes positions in which the work of dietitian is combined with that of institutional manager.

Commercial positions. These include experts employed by banks, hotels, and land companies; in manufacture and marketing of foods and textiles; in research and testing work; as instructors to sales force and factory employees, and in many other unspecified lines. Salaries range

from \$1040 to \$10,000 with averages of from \$1900 to \$7500. One position pays \$300 per month with board. These lines of work give promise of good remuneration.

Positions in journalism. This covers editorial and publicity work for newspapers, magazines, and farm papers. The salaries range from \$1500 to \$10,000. One newspaper paid a recent graduate \$50 a week for two hours daily work. The average is \$3200, or, counting out the one exceptionally high salary of \$10,000, \$2350. This line of work, like the commercial field, offers attractive opportunities for women with the necessary qualifications.

Miscellaneous positions. Here are classed supervisors and directors not associated with a single institution but maintained by state, city or other general agency; visiting housekeepers; social welfare workers; head of agricultural league; unspecified positions. The salaries range from \$1000 to \$7500. In one case the salary is increased after three months; in another the pay is \$100 a week and transportation expense; in another all travelling expenses are given in addition to the salary; in still another, room, board, and laundry.

It may be worth noting that the average of the 310 salaries here considered is \$2307; 59.4 per cent of the salaries come below this amount and 40.6 per cent above it. The best paying positions are in the commercial and journalistic fields, which are rivals in the opportunities offered, but it should be noted that the higher salaries are paid to women of unusual qualifications and experience; such amounts as the three \$10,000 salaries included in the tabulations are very exceptional. Next in order of compensation come the managerial and a few of the miscellaneous positions, such as state supervisors. The apparent salary of these is in some instances increased by maintenance, especially in the case of managers and dietitians. In comparing teacher's salaries, allowance must be made for the number of weeks' vacation allowed; the extra compensation given for teaching during the summer term varies in different institutions.

While these figures perhaps represent the "cream" of positions in home economics, they indicate that the openings for women of comparable training and ability, compare favorably with those in other lines. They also indicate that the increasing connection between home economics and the business world is widening the opportunities for home economics workers, and in so doing tends to increase the salaries paid for the older types of work.

ALIMENTARY HYGIENE AND RATIONAL ALIMENTATION
IN THE YEAR 3000

ALICE F. MENDEL

Authors have frequently exposed the faults of civilization by forecasting conditions of the future. So Bellamy has done in "Looking Backward," and H. G. Wells in "The War of the Worlds." This method is employed also by Dr. A. Hemmerdinger of Paris in divining the food conditions in the socialistic world of the year 3000 in a far-distant planet to which the reader is transplanted by aeroplane. The subtle criticisms of present day conditions are not without interest to students of home economics.¹

Do not think that we, men of the thirtieth century, are much better than those of the preceding. We are only a little more intelligent, a little more conscious of our interest, a little better informed; we understand a certain number of old truths in the sense that we have applied them. We understand that, of all the riches at our disposal for conquering the world, the most important and indispensable is man himself. We understand that man will yield the best possible results only if he is nourished in the best conditions.

Finally we understand that, if an appropriate food is indispensable to the adult in order to produce the best results, it is still more important for the adolescent, and most of all for the nursling, the being just born, whose organs are entirely transformed for all life, physically and intellectually, by a determined nourishment. These are the bases on which our alimentation reposes. We distinguish among human beings four periods: the nursling, the infant, the adolescent, the adult.

As Wells had thought way back in the twentieth century, we believe that the community cannot be disinterested in the feeding of the nursling, since its diet is at the basis of all society. The physiologists have taught us definitely that for the new born child one nourishment alone is correct, the milk of its mother; and, as we have judged that nourishment indispensable, we organized in order to provide it in the greatest possible number of cases. We begin by taking the young girl, the child at school, and at the same time that we teach her to read and to write, we teach her simple, but indispensable ideas, concerning puericulture.

Moreover, as we consider that the woman who nurses a child fills the most useful rôle in society, we think that rôle ought to be compensated. Hence

¹ The free and abbreviated translation that follows is from an article in the *Bulletin de la Société Scientifique D'Hygiène Alimentaire*, Paris, 1919, VII, no. 3, p. 105.

the nursing mother receives a salary equal to that of the best craftsman in the most difficult craft, so that there is not that atrocity of the twentieth century—a mother obliged to sell to a stranger the milk destined for her child.

In spite of this amelioration for the health of all humanity, there are still cases where the mother cannot completely nourish her child. Another mother must supply the needed milk.

Inasmuch as we know that the milk of the ass is most like that of a woman, we have established large parks where we raise these animals. These parks are placed under the care of distinguished hygienists; the animals are kept in a good state of health, and they furnish a milk which can be given raw for mixed feeding and is especially good for solely artificial nutriment.

We know that milk is indispensable to nurslings because of its vitamins. Infantile mortality, which involved, in the twentieth century, at least half of the births in certain countries like France, is lowered to almost zero, for that mortality was assassination by poor nutrition.

This is what we have done for the infant, and I add that society does not hesitate to take from the mother the infants—the case is exceptional—who are not raised according to the principles of growth. We believe that the child does not belong to its mother, but to the community, which delegates to the mother the right and duty of raising it, as she is the best qualified for that; nevertheless society does not hesitate to withdraw that rôle from her who does not know how to fill it.

From the time the child ceases to be a nursling until it is seven or eight years old, physiologists teach us that good milk is still needed. Now, the milk of the ass is no longer necessary; the milk of the cow suffices and we have given every care to the creation of large, collective dairies. We think that milk, that food most precious for all—children, certain invalids, the old, and even adults—ought to be the object of a very particular care. We have therefore eliminated, little by little, those criminals of the twentieth century, the milk defrauders. We have concluded there were no greater criminals in society, and we have sent them to the planet Mars and the race has gradually disappeared.

We no longer give entire freedom to the parents in the feeding of the adolescent. His regimen becomes more difficult to regulate than that of the infant and, as we think that an exactly regulated diet is indispensable to his proper development, we furnish it gratuitously, under the care of our hygienists. As man becomes less and less carnivorous, our adolescents can, in general, find in milk and eggs what is necessary for their growth.

In the case of the adult, knowing better how to proportion the qualitative need of nitrogenous matter, we have been able to diminish the quantitative requirement. Appreciating the importance of certain microorganisms added to our food, we have been able to diminish the ration, with the result that M.

Berthelot's complete ration, in the form of a tablet, becomes a small portion; the allowance necessary for the repast of the day is placed gratuitously at the disposition of those who ask for it. As a matter of fact they are few.

No one is obliged to work to live and therefore every one labors, because work is necessary for man, and because Berthelot's tablet is not very pleasant. All prefer the old alimentation according to the ancient method of cooking, which can be had only by working, to the short rations sufficient for living and which can be obtained gratuitously—for we have admitted that the being who has not asked to live in the world has the right to live.

In truth we have greatly perfected the kitchen, where everything is done by electricity so that the cook is no longer obliged to soil his hands. Cookery has become the most important branch of medicine. Next to the mother nursing her child, we consider the cook to be the most useful member of society. Much more is asked of him than in barbarous times. The chef must know not only how to cook, but also how to plan a menu according to individual needs. We have large community kitchens, where every one can supply himself, either by eating at the place, or having his repast sent to his home. Each is free to choose his menu as he requires. But those who are not especially interested in cooking need only give the chef their weight and their occupation for which they will receive a suitable menu. This is not the same for him who does manual labor as for him who does intellectual work. Moreover, there is no longer need of computing the calories of the diet; the cook knows perfectly how to apportion the condiments and to present the food so that the appetite of each may be the best guide. The problem belongs entirely to the chef.

Has the family cook disappeared? Not at all. Many women have learned cookery, for, having looked after the family taste, they have admitted—as was thought formerly—that household cares, the preparation of the food and family life were worthy occupations not inferior to any other vocation and also not without charm.

Our diet has become much more vegetarian, because the great obstacles of the twentieth century no longer exist—lack of time to prepare vegetables, and the difficulty of transporting all the exotic fruits. The community kitchen has solved the first problem, the aeroplane the second. Wine is rarely used at our tables and alcohol has entirely disappeared.

This picture which I have drawn for you, this dream of the year 3000, can become a reality in 100 years, in 40, less, perhaps. Are there not already some timid attempts? For instance, canteens where mothers obtain food gratuitously.

Science is the great revolutionist. If its results are translated into practice, the face of the world will be convulsed much more surely, much more completely, than by the most bloody revolutions.

A PLAN FOR REDUCING EXPENSES IN A SCHOOL LUNCH ROOM¹

BLANCHE INGERSOLL

If you are a home economics teacher, struggling with the question of finances, or with a school lunch room, or both, listen to the story of what we did last year in the Junior High School at Little Rock, Arkansas. One hundred girls were enrolled in the cooking classes, with one teacher. With the aid of the Supervisor of Home Economics and from one to five paid workers, these girls prepared and served lunch to 500-600 people, daily, in the school lunch room, with the result that in the one year the lunch room paid for itself, for the laboratory supplies, and for most of the equipment.

The supervisor planned the menus, bought all supplies, and managed the lunch room. The principal idea in the planning of the menus was to give the children good, wholesome food, food which would be nourishing and satisfying, and yet not heavy. The menu consisted of several hot dishes, sandwiches, ice cream, some sweets, and fruits. The "whole meal in one dish" idea was emphasized with the use of such dishes as stew with vegetables, meat hash, hamburger sandwiches. The child's taste was catered to by the service of dishes which children like, and foods for which they care less were made as attractive as possible. As a result the lunch room was popular with the students. At first the idea had been to serve food which would supplement the lunch brought from home, but the parents soon found out that the child could buy a better lunch for 20 cents in the school lunch room than could be put up at home for the same money.

The cooking classes, meeting daily, prepared all food for the lunch room as laboratory work. The laboratory-kitchen was equipped with twelve stoves of the size used in the ordinary household, and all of the equipment was "family sized." The half-gallon double boiler was used and other things in proportion. The advantage in the use of such equipment rather than the large institution equipment, or the small cooking laboratory equipment, is readily seen. One class cooked potatoes, another class cocoa, each class preparing something which was on the day's menu, and each girl preparing a quantity which would serve six people. In the case of foods requiring long cooking, it was necessary to begin

¹ An interview with Myrtle Wilson, Supervisor of Home Economics, Little Rock, Ark.

the preparation one day and finish it the next, or to have one class partly cook the food and a later section finish it.

The menus and lessons were planned so as to avoid repetition. After a few lessons on sandwiches, the sandwiches for each day were made by the paid workers. The girls were taught to make bread, but the bread for the lunch room was purchased, as was also the ice cream. The menu in the faculty room was varied so as to include corn bread, muffins, and other quick breads occasionally instead of sandwiches, thus giving opportunities for quick bread lessons to the classes.

In the cafeteria most of the food sold for 5 cents a portion, but in the faculty room higher prices were charged. The girls computed the costs, figuring how much of one food could be served for 5 cents, and if a normal portion cost more than 5 cents they determined how to make up the difference. It was surprising to see how quickly the girls—even the seventh grade girls—questioned the advisability of selling different sandwiches, such as peanut butter, raisin, and pimento cheese, for the same price, but they soon saw that the profit on the peanut butter sandwich could be used to make up the loss on some other kind, so that all sandwiches could be sold at the uniform price of 5 cents. They learned, too, that the profit on a vegetable soup served one day would make up the loss on a more expensive cream soup served another day.

In addition to preparing the food, the cooking classes performed all the work of the lunch room, each section serving during the noon hour for a month at a time. The paid workers merely supplemented the work of the classes. There was always a waiting list of girls who wanted to work for their lunch. Cafeteria service was used in the student lunch room and table service in the faculty room. The arrangement of the rooms, including the arrangement of the food on the steam table and on the counter, gave the girls some very valuable ideas as to sanitation and quantities of food. Each girl was given an opportunity to serve in each different capacity—behind the counter, as checker or cashier, to make salads as they were needed, as waitress in the faculty room. Some very valuable experience in table service was secured in the faculty room. The orders were checked on menu cards, which were typewritten by the students in the commercial department. The girls filled the orders and served them.

The cost of the food to the children was reduced by purchasing in large quantities at wholesale prices. The only expense, other than the cost of the food, was the wages of the paid workers. With more teachers,

and consequently more sections, a greater variety of food could be served and fewer paid workers would be necessary. As was stated before—the lunch room was not only self supporting but eliminated all expenditures for laboratory supplies and paid for most of the equipment.

Aside from the advantage in dollars and cents to all the students, this plan offers many special advantages to the girls in the cooking classes. Each girl becomes familiar with market prices, learns to estimate the cost of different foods, has practical experience in handling the amounts of foods and equipment that would be used in the average family, learns the fundamentals of good table service, and develops a sense of responsibility.

“A LITTLE NONSENSE NOW AND THEN”

I yearn to bite on a colloid
With phosphorus, iron, and beans;
I want to be filled with calcium, grilled,
And veg'table Vitamines!

I yearn to bite on a colloid
(Though I don't know what it means)
To line my inside with potassium, fried,
And veg'table Vitamines.

I would sate my soul with spinach
And dandelion greens,
No eggs, nor ham, nor the hard boiled clam,
But veg'table Vitamines.

Hi, Waiter! Coddle the colloids
With phosphorus, iron, and beans;
Though mineral salts may have some faults
Bring on the Vitamines.

—Anonymous.

FOR THE HOMEMAKER

IS THERE A STANDARD BUDGET?

ALICE P. NORTON

What is the ideal division of the family budget for the year 1920? is an unanswerable question that has been put to the JOURNAL. A few years ago there had been worked out for different sized incomes certain percentages that might be considered "ideal." It was never even then considered that these could be used for families of different types without modification by variations in occupation, in location, in social demands. Today such percentages have little more than historic value. Not only has the cost of each item increased in different ratio, but changes in price occur with amazing rapidity. Before the results of a survey of prices is available, the material is out of date.

If by a "standard budget" is meant one that may be presented as a model toward which individual families should endeavor to adjust the division of their incomes, any attempt to formulate such a standard is useless, and it is sometimes worse than useless to offer it to those who are seeking help in making a spending plan suited to their own special needs. If a "standard budget" means not a "model" but an example, and if it is based on legitimate needs and actual expenditures of large groups of people and on average prices, it may be of the greatest service as a guide, especially for one making a tentative plan. Such budgets are probably most serviceable when based on minimum standards at different "living levels." The Department of Labor suggests¹ as most important of these the "pauper or poverty level," in which families receive aid from charity or run into serious debt; the "minimum of subsistence level," based on mere animal existence with little allowed for social needs; the "minimum of health and comfort level," taking into account not mere material need, but education, some amusement, and some insurance, with consideration of self respect as well as decency. To this might be added the "minimum of luxury" level. Properly, in a well organized society no family should fall below the third level.

¹ *Monthly Labor Review*, December, 1919.

In order to furnish information for the commission appointed by Congress on Reclassification of Salaries, the Department of Labor has lately published a budget for the family of a government employee in Washington, based on the minimum comfort level. The family chosen was the so-called economic family, consisting of a husband, wife, and three children, a boy of eleven, a girl of five and a boy of two. It must be remembered in interpreting this budget that food is probably higher in Washington at present than in the majority of places in the country. According to various estimates six hundred dollars would provide the amount needed. Rents are also high. Each factor has been worked out with care. The budget is intended to provide for a sufficient amount of nourishing food for the maintenance of health; for housing in a low rent neighborhood with the smallest possible number of rooms consistent with decency, but with sufficient light, heat, and toilet facilities for the maintenance of health; for the upkeep of household equipment, with no provision for additional furnishing; for clothing sufficient for warmth, of good quality, but with no further regard for appearance and style than necessary to avoid slovenliness or loss of self respect; for the keeping up of a modest amount of insurance, for contribution to church, for medical and dental care, simple occasional amusements, necessary street car fare and the daily paper. The summary of the budget is given below.

Summary of budget

Cost of quantity budget at market prices	
I. Food	\$773.93
II. Clothing:	
Husband	\$121.16
Wife	166.46
Boy (11 years)	96.60
Girl (5 years)	82.50
Boy (2 years)	47.00
	<hr/>
	513.72
III. Housing, fuel and light	428.00
IV. Miscellaneous	546.82
	<hr/>
Total budget at market prices	\$2,262.47

Possible saving upon market cost by a family of extreme thrift, of high intelligence, great industry in shopping, good fortune in purchasing at lowest prices, and in which the wife is able to do a maximum amount of home work:

I. Food (7½ per cent)	\$58.04
II. Clothing (10 per cent)	51.37
III. Housing	30.00
IV. Miscellaneous	107.50
Total economies	\$246.91
Total budget minus economies	\$2,015.56

Other budget examples are given by the Home Economics Bureau of the Society for Savings in Cleveland.

Two are included here. The headings under which the items are grouped differ somewhat from those used by the Department of Labor but they may easily be compared. These estimates are given by the month instead of the year.

Suggested budget on monthly basis

	INCOME \$1,800 A YEAR				INCOME \$2,400 A YEAR			
	Number in the family				Number in the family			
	Two	Three	Four	Five	Two	Three	Four	Five
Savings	\$20.00	\$16.00	\$10.00	\$8.00	\$40.00	\$27.00	\$23.00	\$22.00
Food	40.00	44.00	48.00	50.00	42.00	50.00	58.00	60.00
Rent	30.00	33.00	35.00	35.00	40.00	40.00	42.00	42.00
Clothing	25.00	25.00	30.00	35.00	30.00	35.00	35.00	35.00
Operating	15.00	15.00	15.00	15.00	18.00	18.00	18.00	18.00
Advancement	20.00	17.00	12.00	7.00	30.00	30.00	24.00	23.00

The Savings Division of the U. S. Treasury Department in "How Other People Get Ahead" offered last year yet other examples. These are probably low in rent and housekeeping expenses for most localities today and it would be necessary to transfer to these items something from savings and from other items.

Before attempting to make a budget, especially if one has not kept classified accounts upon which to base one's estimates, it is well to study such examples as have been given. Determining first whether one's income should put one in the "comfort" or the "luxury" class, one may make such additions to the minimum standard in each class as the income allows and choice suggests.

ESTIMATING FOOD COSTS

The housekeeper of today is becoming familiar with the term calorie, and the 100-calorie portion. She is seeing the value of training herself to estimate in a rough way the amount of food she is serving to her family. She is also learning that the food that is cheapest per pound is not always the cheapest from the standpoint of the energy it furnishes to the body.

In this day of high prices, she is interested in knowing what foods that will adequately feed the family can be bought most cheaply when figured on a sustenance basis rather than on a pound or pint basis. This table prepared by the Department of Agriculture is intended to help her do this in an easy way. By inserting the price per pound or bushel at the proper place in the third column of the table and dividing it by the corresponding figure in the second column she can determine the price of a 100-calorie portion of a particular food. For example, if she finds that sirloin steak is 50 cents a pound, she writes "50" opposite sirloin steak in the third column. Then she looks in the second column and finds, opposite sirloin steak, "10 per pound." She divides 50 by 10. The quotient is 5. Five cents, therefore, is the price of a 100-calorie portion of sirloin steak. In exactly the same way she can find the cost per 100-calorie portion of any food.

One must remember, however, that other things than body fuel are necessary in human food. Not all of the necessary body fuel may safely be taken from any one of the food groups. Of the 120 100-calorie portions necessary each day for the average family of five, consisting of father, mother, and three children, about 24 should come from vegetables and fruits, 36 from milk, eggs, and meat, 30 from cereals and legumes, 12 from sugar and sugary foods, and 18 from fats and fatty foods.

For a family of four adults 36 100-calorie portions might come from the cereal group, 24 from milk, eggs, and meat, and 24 from fats and fatty foods. This division is, of course, to be used only as a general guide.

How to figure food costs by calories

ARTICLE	100-CALORIE PORTIONS	PRICE	PRICE PER 100-CALORIE PORTION
Vegetables and fruits			
Potatoes.....	3 per pound	Cents per pound	Cents
Onions.....	2 per pound	do.	do.
Cabbage.....	1 per pound	do.	do.
Corn, canned.....	3 per No. 2 can	Cents per No. 2 can	do.
Peas, canned.....	do.	do.	do.
Tomatoes, canned.....	1 per No. 2 can	do.	do.
Prunes.....	11 per pound	Cents per pound	do.
Oranges (8 ounces each).....	10 per dozen	Cents per dozen	do.
Bananas (5 ounces each).....	11 per dozen	do.	do.
Milk, eggs, meat			
Milk.....	6 per quart	Cents per quart	Cents
Cheese.....	20 per pound	Cents per pound	do.
Eggs.....	9 per dozen	Cents per dozen	do.
Sirloin steak.....	10 per pound	Cents per pound	do.
Round steak.....	7 per pound	do.	do.
Rib roast.....	11 per pound	do.	do.
Chuck roast.....	7 per pound	do.	do.
Plate beef.....	12 per pound	do.	do.
Cereals			
Corn meal.....	16 per pound	Cents per pound	Cents
Rolled oats.....	18 per pound	do.	do.
Wheat flour.....	16 per pound	do.	do.
Bread.....	12 per pound	do.	do.
Rice.....	16 per pound	do.	do.
Macaroni.....	do.	do.	do.
Corn flakes.....	do.	do.	do.
Beans, dried.....	do.	do.	do.
Sugar and sugary foods			
Sugar, granulated.....	18 per pound	Cents per pound	Cents
Sugar, lump.....	do.	do.	do.
Sugar, maple.....	13 per pound	do.	do.
Honey.....	15 per pound	do.	do.
Molasses.....	13 per pound	do.	do.
Sirup, corn.....	14 per pound	do.	do.
Candy.....	17 per pound	do.	do.
Fat and fatty foods			
Butter.....	34 per pound	Cents per pound	Cents
Lard.....	41 per pound	do.	do.
Vegetable oils.....	do.	do.	do.
Bacon.....	26 per pound	do.	do.
Cream.....	9 per pint	Cents per pint	do.

SOME HOME CANNING COSTS FOR 1919

MARION WOODBURY

The figures given in the accompanying table represent what would be the actual cash outlay for the average family doing home canning on a small scale. No attempt is made to take labor into account.

The vegetables were raised on the premises, the fruits were bought at local prices. The vegetable garden was a lot 80 by 135 feet—about a quarter of an acre. This was owned and tended by three small families in partnership, and furnished all their vegetables for table use and canning. These included potatoes, onions, shell beans, winter root vegetables, and celery. The cost of the garden included plowing, seeds, fertilizer, spray materials, and a few small tools. The labor was furnished by the owners and amounted to about 100 hours for the season.

In estimating the value of produce, tomatoes, potatoes, beans, and peas were priced by the bushel at the time of lowest market price; corn by the dozen ears; other vegetables by the pound. By comparing the total value of the produce obtained with the net cost of the garden, it was estimated that the vegetables cost approximately 50 per cent of market price. This per cent was used in figuring the cost of the home grown materials used in canning.

The cost of the jars and caps, and other containers was figured at one-fifth cost. New rubbers were bought at 3 dozen for 23 cents; paraffin cost 41 cents for 3 pounds.

The fuel cost is estimated somewhat roughly. One gas burner running full was found to cost about one cent per hour. The length of time the gas burned was divided by two, as the burners were turned low more than half the time. The cost per jar for a given amount of vegetables would be somewhat lower if the entire quantity were canned in one day. Often several cookings were made as the surplus from the garden became available in small lots.

Only the time actually employed in preparation and in cleaning up was reckoned. As the other work was being done while cooking was going on, this time was not counted.

The market prices of goods are those of a large mail order house. Those at a retail store would be 10 to 20 per cent higher.

The cost of the home canned product, not taking labor into account, would average about one-third the market cost. The difference may be taken as representing roughly the saving achieved.

Cost of home canned products

MATERIAL	AMOUNT	COST OF MATERIAL	COST OF JARS	COST OF FUEL	METHOD USED	TIME USED <i>hrs. min.</i>	TOTAL PRODUCT	NET WEIGHT OF ONE JAR <i>lbs. oz.</i>	TOTAL COST PER JAR	MARKET COST OF EQUIVALENT AMOUNT
Tomatoes.....	$\frac{1}{2}$ bu.	\$0.28	\$0.24	\$0.03	Open kettle	3 30	11 qts.	2 1	\$0.55	\$0.223
Tomatoes.....	$\frac{1}{2}$ bu.	.06	.14	.03	Cold pack, hot water bath	1 30	6 qts. {whole fruit}	1 1	.23	Not on market
Peas.....	35 lbs.	1.40	.23	.06	Cold pack, steam pressure	9 00	10 qts.	2 0	1.69	.282
String beans.....	30 lbs.	.50	.36	.08	Cold pack, steam pressure	10 00	16 qts.	2 0	.94	.288
Carrots.....	12 lbs.	.18	.14	.02	Cold pack, steam pressure	4 00	6 qts.	2 4	.34	Not on market
Beets.....	20 lbs.	.20	.23	.04	Cold pack, hot water bath	4 00	10 qts.	2 4	.47	.237
Corn.....	12 doz.	1.50	.27	.04	Cold pack, steam pressure	8 00	12 qts.	2 0	1.81	.32
Asparagus.....	24 bun.	1.25	.23	.05	Cold pack, steam pressure	3 00	10 qts.	2 0	1.53	.794
Currants.....	3 qts.	1.20	.23	.03	Two extractions	3 00	15 gl. jelly	0 8	2.01	Not on market
Sugar.....	5 lbs.	.55								
Strawberries.....	12 qts.	1.50	.29	.03	Open kettle	2 00	14 pt. jam	1 4	2.70	.48
Sugar.....	8 lbs.	.88								
Cherries.....	12 qts.	.75	.25	.03	Open kettle	4 00	12 pt.	1 4	1.47	.37
Sugar.....	4 lbs.	.44								
Peaches.....	$\frac{1}{2}$ bu.	1.88	.29	.04	Open kettle	4 00	13 qts.	2 4	2.98	.60
Sugar.....	7 lbs.	.77								
Peach skins and stones										
Apples.....	1 lb.	.05	.12	.03	Open kettle	2 00	5 pt. butter	1 4	.31	.31
Sugar.....	1 lb.	.11								
Crabapples (culls).....	$\frac{1}{2}$ bu.	.50	.65	.04	Two extractions.	4 00	43 gl. jelly	0 8	1.96	.121
Sugar.....	7 lbs.	.77								
Pulp from jelly.....			.25	.04		2 00	12 pt. butter	1 4	.87	.218
Sugar.....	5 lbs.	.55								
Spices.....		.03								
Grapes (Concord).....	20 lbs.	2.00	.33	.02	Two extractions.	4 00	20 qts.		3.01	.75
Sugar.....	6 lbs.	.66							.15	

FOOD RULES FOR SCHOOL CHILDREN

Begin the day by drinking a glass of water and drink at least six glasses during the day.

Do not go to school without breakfast.

Eat regularly three times a day.

Eat slowly and chew all food well.

Drink milk every day—four glasses are not too much.

Eat some breakfast cereal every day.

Eat some vegetable besides potato every day.

Eat bread and butter every meal.

Eat some fruit every day. Spend the pennies for apples instead of candy.

Do not eat candy between meals; eat candy and other sweets only at the end of a regular meal.

Do not drink tea or coffee; it does the body no good but does do it harm.

Do not eat or touch any food without first washing the hands.

Do not eat fruit without first washing it.

Do not eat with a spoon or fork which has been used by any other person without first washing it.

Do not drink from a glass or cup which has been used by another person without washing it.

Do not eat from the same dish with any other person.

—*The Commonhealth.*

While the modern homemaker is much less a producer than formerly, and more a consumer, it is still true that the home produces wealth. The housewife, having selected and purchased materials, makes them into food, clothing, and shelter for her family. Her skill in thus converting raw materials into products which the family requires, determines the value of the dollar spent for the raw material. In so far as she increases the value of the raw material by her manipulation of them, is she adding to the resources of the family.

Federal Board for Vocational Education.

EDITORIAL

The Fund for Constantinople College. The Council of the A. H. E. A. at the meeting in Cleveland voted to undertake the raising of \$6000 to establish for three years a chair of Home Economics in the American College for Girls in Constantinople, and to send a teacher there from America.

The needs of the college have been stated in a former issue of the JOURNAL. Miss Jenkins' story (in the March number) showing what one graduate accomplished ought to make us see the wonderful opportunity to reach out into many homes and into the very kind of homes that most need help.

The A. H. E. A. as an association has had few opportunities to raise money with its only purpose the service of others, though service is of course the primary reason for the very existence of the Association.

Professor Abby Marlatt of the University of Wisconsin has been made general chairman of the Committee for raising this fund. Sectional chairmen have been appointed to aid her.

Let us all take hold with a will, so that at the annual meeting the money may be in hand.

The Board of Trustees of the Constantinople College have asked that the Association present the names of three candidates from among whom the appointee may be selected, and has indicated the following basis of qualification: "the appointee should be a mature woman, at least 35 years of age, an expert in her work; she should be adaptable to foreign conditions and broad minded in building up what she finds in the East rather than imposing American custom. She should have organizing as well as teaching ability as it would be her place to build up a new department, and she should also be able to correlate the courses that she already finds in the College with her department. She should be capable of a personal interest in her students and also of a broad vision of the work."

Those who are interested in considering the Constantinople position are asked to communicate with the Chairman of the International Committee of the American Home Economics Association, Dr. H. R. Andrews, Teachers College, New York City.

Home Economics Abroad. The International Committee on the Teaching of Home Economics calls the attention of all teachers of home economics to the opportunity afforded American teachers to advance the cause of home economics in other countries by bringing the American Home Economics Movement to the attention of foreign students attending American institutions of higher learning, and also to the opportunity for meeting representatives of foreign school systems who occasionally visit American institutions. It is suggested that every home economics department in a college or normal school, which has foreign students in attendance, arrange early in the second half year for a home economics reception to which all foreign students in attendance at the institution will be invited. An explanation of the plans and purposes of home economics teaching in American schools might be placed before the foreign students at such a time. Some form of social entertainment will as a matter of course be made part of such an occasion. In this way education for the home can be promoted in various countries through the interest developed in foreign students attending American institutions. Foreign men students as well as women should be invited to such a gathering. The Y. W. C. A. organization in the institution will often be interested to coöperate with the Home Economics Department in such an undertaking.

Among the foreign visitors who have recently come to America to make inquiry regarding the teaching of home economics in American schools are Professor Munda Bernardi of Rome, Italy, and Miss Hilda Kissler of Berne, Switzerland. Both of these teachers visited the Home Economics Division of the United States Bureau of Education, Washington, D. C., and schools in various parts of the country.

Mrs. Calvin of the Bureau of Education reports also that Senora Elisa Zegers de Fernandez of Santiago, Chili, has been recently making inquiry regarding the teaching of home economics in American schools. Senora de Fernandez reports that home economics was established in Santiago in 1907 under a Swedish teacher. At first the work was for only one year, but the course was increased until there was finally a three years' course in teacher training leading to the title of professor, and including not only cooking, garment making, and child care, but also the history of education, psychology, pedagogy, civics, political science, and other subjects.

Rancidity of Fat. Some recent reports on fat decomposition add considerably to our knowledge concerning the substances present in rancid fats and the conditions which make for rancidity.

Olive Oil. Holland and others¹ stored a number of portions of olive oil for six years under varying conditions. At the end of that period they found that the sample to which air, light, and moisture had been admitted showed the greatest increase in acidity, going from 2 per cent in the original to over 10 per cent in the final analysis, an increase of something over 400 per cent. When any one of these factors was omitted there was but slight increase in acidity. When all three—air, light, and moisture—were excluded, the acidity actually decreased. Oxidation was greatest in the presence of air and light as was shown by the increase in the saponification number and decrease in iodine number. In the absence of air and light oxidation was practically nil.

The changes were sufficiently great to give fat a rancid taste and odor at the end of two years.

Corn meal. Those of us who struggled with spoiled corn meal during the wheat saving period will be interested in the work of Rabak.² He inoculated corn meal with mold and examined the ether extract of this moldy corn at intervals during a ninety-day period. A profound decomposition of the fat molecule took place. The ether extract decreased from 5.58 per cent in the fresh corn to 2.02 per cent in the thoroughly moldy sample. The oil itself increased greatly in free acid content, going from an acid value of 13.6 to 72.1. At the same time the general oxidation products rose steadily, for the iodine value dropped, and the acetyl value rose.

Another evidence of the profound changes in the corn oil was the great increase in the per cent of non-fatty (unsaponifiable) matter, something over 500 per cent in fact. Thus hydrolysis, oxidation, and general decomposition seem to have taken place.

The precise nature of all of these fat decomposition products is not known; consequently it is not possible to state just which of them directly give the rancid taste and odor. Since few, if any, of the glycerides of the bad tasting fatty acids are found in olive and corn oil, the acids formed by hydrolysis are not here primarily responsible for rancidity. The condition must then be essentially due to oxidation products of one kind or another, probably to aldehydes, ketones, and hydrocarbons, for many of these may be of an unpleasant nature.

¹ Holland, Reed and Buckley: *Jour. Agr. Research*, 13, 353, 1918.

² Frank Rabak: *Jour. Indus. and Engin. Chem.*, 12, 46, 1920.

Although these investigations leave much to be learned about the substances present in a rancid fat, they do afford definite information regarding proper storage conditions. Judging from these results it seems safe to assume that moisture-free fats kept in the dark away from air will keep for an indefinite period.

Acid-Base Balance and Disease. A prolonged diet on acid forming food has recently been suggested as another possible cause for lowering the resistance of the body to disease. Some foods—meat and cereals—have an acid residue, while others—fruit, vegetables, and milk—have a basic one, and a diet having an acid-base balance has been considered to be the most desirable though there has not been much proof of this.

A dietary study of thirty-one of the Army Camps showed an excess of acid forming food in the mess. In contrast to this diet of the well soldier, the patients of a certain army hospital received base forming rations on six out of seven days. The dietaries of the base hospitals at different camps were found to be consistently basic in character. "Is this alkaline reaction of dietaries of the sick a mere coincidence, or has a process of selection hit upon the seeming fact that neutral or base forming diets are best suited to the needs of convalescents?"

To investigate this problem Blatherwick made a study³ of the bills of fare of certain organizations at Camp Wheeler covering a period of two months when there were numerous cases of measles, mumps, influenza, and pneumonia. The diet had been changed from one pound of meat and one of potatoes per man per day, to one pound of meat, one-fourth pound of potato, and rice or hominy, in other words to a more acid type. The results of the investigation showed a rough but unmistakable parallelism between the amount of meat and the number of cases of sickness. An increase of meat seemed to be followed by an increase of sickness. Of course the figures do not permit definite conclusions, but suggest that a continued use of a diet of acid forming foods may lead to a greater susceptibility to disease.

How Long Does it Take to Print a Journal? There seems to be some misunderstanding on the part of the contributors to the JOURNAL in regard to the time necessary to make up a magazine and put it through the press. The last day of March, for example, a note comes into the

³ Blatherwick, N. R., *Amer. Jour. Physiol.*, 49, 567, 1919.

office with the urgent request that accompanying material appear in the April number. The material for the April number should be in the hands of the printer by February 28. It is possible to make a few minor additions to page proof as late as the middle of March, but if much material is added it may mean a second page proof, and is sure to delay the issue of the JOURNAL. There are enough unavoidable delays without adding unnecessary ones.

Many of the magazines are "made up," in great part, six months in advance. We are making a very reasonable request when we ask that we shall receive material five weeks before the date of issue, and as soon as we can surmount the many difficulties with which all publications have had to contend in the last years we hope the JOURNAL will be ready for distribution on the first of each month.

THE OPEN FORUM

A Plea for the Teacher.—I should like to make a suggestion. Thousands of home economics teachers are in small localities where they have little opportunity to talk over their work with other teachers. It would be a great help if a page in the JOURNAL OF HOME ECONOMICS were given over to discussion of the every day problems which grammar and high school home economics teachers meet in planning their courses and managing their classes. We are so apt to get into ruts and follow the course of least resistance,—to fail to keep up with progress, and let our work become too narrow in scope.

The chance to keep in closer touch with what other teachers are doing, and to submit to others for discussion the problems we find difficult to solve would awaken us and inspire us to do better work and more work.

Is there not a place for such a départment to appear regularly in the JOURNAL OF HOME ECONOMICS?

Some of my problems may suggest the needs of other elementary teachers. I should like very much to hear how others are meeting these.

How should school work be connected with the home?

How should meal service be carried out?

How much work should be given in food values and meal planning, and what is the best way to teach it?

What work should be given in textiles?

When each pupil has a lesson in domestic science only once a week (2 hour period) through the three grades (6th, 7th and 8th) is it best to alternate the work in cooking and sewing each week or concentrate first on one and then on the other?

How much work should girls accomplish in sewing in this time?

Is it best to attempt the making of a simple dress in the eighth grade with such a small amount of time, and large classes (averaging 20).

In the grades is it best to give children their recipes and other information through text books, note books, or printed sheets? If through text books, what ones are best to use?

In my classes it seems best to continue some hand sewing after introducing machine work. How can the teacher best explain to the pupil that this hand work is not a waste of time?

RENA GRAY.

A Practical Application of Food Study. As a partial answer to the question of how work in foods may be related to the home conditions of the student, a class of 27 Juniors in Elementary Dietetics in the University of West Virginia kept the amounts and cost of food for a week during the Christmas holidays, following Caroline Hunt's outline.

The food costs were found to be about two to two and one-half cents per 100 calories, ranging from 66 to 85 cents per 3300 calories. These results were compared with the market list given by Miss Nesbitt in the pamphlet "Dependent Families in Chicago." According to her figures in April, 1919, a minimum cost for the "standard" man was 43 cents. Those same foods in Morgantown on January, 1920, cost 60 cents.

It is interesting to know that some of the poorest students in the class reported the greatest influence on the family food habits as a result of the study.

Some of the comments as to the students' estimation of the value of the study of the week's market list may be of interest.

"My mother has known others to have made similar studies but she has never before had opportunity to know how it was done. She wants me to practice next summer the things that I have learned in this course. Although mother is interested, when she is very hurried she does not pay much attention to varieties."

"My family thought this study the most practical thing that I have done since I have been in West Virginia University. As a result my mother is now making every effort to conform to the standards that I have explained to her, and our market basket is improving rapidly."

"My family thought at first that it was a joke and did not think it was very practical. Mother did not see the point of so much weighing and figuring until I showed her the results that I obtained. When I told her that we used too much fat and not enough cereals and milk and explained to her why we should use more milk and milk products and less meat and less fat she became interested and decided that she would make a few changes. She has reduced the fats and sugar. Since the holidays we had had illness in the family and the doctor confirmed my statement of more milk and cereals and less meat; so mother says from now on she will do the best she can to keep up the standard and that I am to take charge of it this summer."

"Mother helped me with my study. Father was not much concerned about it but my brother did not like it at all. He only wants to eat meat and potatoes and does not care for fruit, detests milk and eggs, and cares very little for lettuce or cabbage and fresh vegetables. Now the family have to take what mother and I plan and as we prepare just enough at each time for that meal and as brother does not care to eat bread between meals he is getting so that he is looking forward to each meal and eats what is put before him."

"My family was shocked beyond expression to find that they spent so much money on foods. We have decided that running a monthly bill is too expensive and will pay cash for everything we buy and buy where we please. My family thought at first that the study was foolish. I told them that it was to see if the money for foods was evenly distributed among the different kinds. They found that it was not. Now we are keeping strict account of everything spent for the month."

"My family was quite interested in this study especially mother who was interested in the problem and has always said that her family use too much meat but she did not know just how much. My family never considered the cost since a great deal of the supplies were raised at home and they forgot that the cost was there just the same. Mother is using more milk instead of selling it at ten cents a quart and uses meat once a day instead of three times."

The girls in one of the fraternity houses said, "It is affecting what we are doing now by making us use more milk and less meat, more vegetables and less fat. The study has also interested all the girls at the house in the study of foods."

RACHEL H. COLWELL,
University of West Virginia.

teachers of home economics reach the home makers of their communities? This plan of dividing into sections after the general meeting has proved very successful.

On February 14, Frederick Snyder, who was Chief of Division of the Coordination of Purchase of the U. S. Food Administration, spoke on Fundamental Economics as Applied to Present Day Market Problems, and Amy Blanchard, Supervisor and Instructor of Employees, in the store of Almy, Bigelow and Washburn, Salem, gave a talk on Practical Points in the Selection of Textiles and Clothing. At later meetings Ways of Meeting the Shortage in Household Service is to be discussed, and Systematic Savings and Methods of Investments.

The School of Home Economics at Chautauqua, New York, is offering this summer a course in experimental cookery under the charge of Elizabeth W. Miller, formerly of the University of Chicago and now of Iowa State College. She is at present on leave of absence and is the Ellen H. Richards fellow at the University of Chicago. Miss Miller has contributed to the JOURNAL from time to time. The course will be open only to graduate or advanced students, and will be accepted for college credit.

Mrs. Norton and Miss Barrows will have charge of the school as in former years, and are planning a Home Information Bureau in addition to various new courses.

The Gift for Home Economics Fellowships at the University of Chicago has been renewed for next year. Two fellowships of \$300 each will be awarded. The candidates must be graduates of an institution of high standing or must already have done some graduate work. This year the fellowships were limited to workers in nutrition but next year they will be awarded to the strongest applicants in any lines of home economics. Applications with recommendations should be in the hands of the chairman of the home economics department or the dean of the graduate schools before June 15.

Notes. The editor of the JOURNAL extends her thanks to her former students who have lately made her a life member of the American Home Economics Association. To the recipient, at least, this is a particularly pleasant renewal of former relationships.

The officers of the recently organized New York State Home Economics Association are: Pres., Laura Sexton, Chazy; V. Pres., Ethel Newlands, Technical School, Buffalo; Secy. and Treas., Edith A. Sarver, 108 Union St., Schenectady; Councilor, May Benedict, Dep't. of Household Arts, Mechanics Institute, Rochester.

Mrs. Mary Schenck Woolman is spending one week of each month in New York directing the making of home economics films for the Community Motion Picture Bureau. Mrs. Woolman asks the cooperation of the Association in extending this service to as many communities as possible.

Make Your Reservations for Colorado Springs. The Antlers Hotel is to be the headquarters for the meeting of the American Home Economics Association, June 24 to 29. The other hotels where reservations are being made are the Acacia and the Alta Vista.

The rates are as follows:

The Antlers—Single room without bath \$3.00, 2 persons \$5.00; double room, 4 persons \$8.00. The same with the bath \$5.00, \$7.00 and \$10.00, respectively.

The Acacia—Single room without bath \$2.50, 2 persons \$4.00. The same with bath \$4.00 and \$6.00, respectively.

The Alta Vista—Single room without bath \$1.50, 2 persons \$2.50. The same with bath, \$2.00 and \$3.50, respectively.

Rooms accommodating three persons and rooms with bath between are also available.

Remember that the meeting of the N. E. A. in Salt Lake City follows—July 4 to 10. It is hoped that arrangements may be made with the railroads to have the reduced rate tickets for Salt Lake City on sale a week early, allowing a stop over at Colorado Springs.

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NOTES ON EARLY NEW ENGLAND EATING

GEORGE S. BRYAN

During their first winter in America, the founders of New England lived on groundnuts, which are not nuts at all, but tubers of the Indian potato, or wild bean. Boiled, they are reported to be agreeable and nutritious. Tradition is that the Puritans first made the acquaintance of Indian corn (or maize) by stealing it from the Indians. Certain versions assert that they afterward paid something for it. Let us hope they did. In any event, they were very soon raising their own. They also wisely followed the example of the Indians by using fish, if fish in quantity were readily obtainable, as a fertilizer. And, furthermore, they learned the virtues of "nocake." The term "nocake" was a corruption of the Massachuset word *noohkik* (*nokehick* being the closely similar Narraganset form). Nocake was made of selected Indian corn parched in hot ashes, then well sifted and thoroughly pulverized. When needed, it was mixed with cold water and drunk. The early Virginians knew it as "rockahomonie."

We have upon our library shelves a learned-looking volume on human foods and their nutritive value; this says nothing whatever about nocake. In fact, the author, though he writes eruditely of protein, gliadin, and phosphoric anhydride, dismisses Indian corn with a few words, saying that for a balanced ration it must be combined with other things. However that may be from the viewpoint of the dietetic chemist, the truth is that parched and pulverized maize was the sole food of Indian runners as they dog-trotted day after day through the forest; it was the chief dependence of the Indian at other times, in country where game was scarce or where he thought it dangerous to hunt; it sustained such

pioneers as Daniel Boone, Simon Kenton, and Davy Crockett in their emergencies; it was a mainstay of the "Two Captains," Lewis and Clark, on eight thousand miles of journey from the Mississippi to the Pacific; it has been relied on, time out of mind, by desert wanderers in Mexico and other countries of Latin-America. It was praised by such men as Roger Williams and Colonel William Byrd (who called it "Sprightful Bread"); and in modern times, T. S. Van Dyke, an outdoors expert of long and varied experience, has said of it: "It is the only form in which you can carry an equal weight and bulk of nutriment on which alone one can, if necessary, live continuously for weeks, and even months, without any disorder of stomach or bowels." Horace Kephart, an authority in "wildcraft," says, "I often carry a small bag of this parched meal when mountaineering."

Nocake (call it by any other name—rockahominy, cold flour, or *pinole*—it is just as good) was the rudiment with which New England folk began the study of preparing foods from Indian corn. That Indian corn and its associate, the pumpkin, played no small part in the morning of New England's history, may be seen from this allusion in Hinsdale's "Old Northwest:" "After describing the American method of tilling the corn and the pumpkin, by which two crops are produced on the same land in one year, while the girdled trees are still standing, Professor Shaler remarks: 'It is hardly too much to say that, but for these American plants and the American method of tilling them, it would have been decidedly more difficult to have fixed the early colonies on this shore.' " Indian corn and pumpkin were gastronomically united in primitive New England johnny cake, the unsweetened corn meal being mixed with a paste of mashed pumpkin that enriched it in both flavor and color.

Time would fail us to tell of all the other ingenious and gustable dishes made from Indian corn by those New England pioneers. There was corn bread, mixed with milk and eggs. There were corn fritters—fried batter cakes of grated sweet maize, with eggs and milk added. There was "ryaninjun," compounded of rye flour, corn meal, milk, water, and yeast; raised by the fire and baked in the brick oven. There was the pudding inseparable from the original New England "boiled dinner." And—most famous of all—there was hasty pudding, which Joel Barlow took as emblematic of the pristine simplicity that still marked his home region, and which he celebrated in a mock-heroic poem whose quiet humor remains vital. "It is interesting," observed

one commentator, "to see what a poetic product he could make out of such a subject as 'mush'" (for "mush" and "suppawn" were other and even less euphonious terms for the same viand).

The basis of the hasty pudding of New England was a batter made by stirring corn meal into boiling water and cooking it until it attained the proper "body." Barlow's authoritative words are:

"In boiling water stir the yellow flour:
The yellow flour, bestrew'd and stirr'd with haste,
Swells in the flood and thickens to a paste,
Then puffs and wallops, rises to the brim,
Drinks the dry knobs that on the surface swim;
The knobs at last the busy ladle breaks,
And the whole mass its true consistence takes."

In eating hasty pudding, Barlow tells us,

"Some with molasses line the luscious treat,
And mix, like bards, the useful with the sweet."

For himself, he preferred to eat it with milk; plenty of the milk being first placed in a bowl, and the pudding then being dropped in until "the soft island looms above the brink." Sirup, sugar, or butter might also be used as accompaniments; and what was left of the pudding could later be fried. A note to Barlow's poem contains the following warning: "In eating, beware of the lurking heat that lies deep in the mass; dip your spoon gently, take shallow dips, and cool it by degrees. It is sometimes necessary to blow. This is indicated by certain signs which every experienced feeder knows."

Scholars have held that the pumpkin was known in England as early as 1570, having been introduced from the East. Probably, therefore, at least some of the early New England colonists had grown it or seen it grown, in a small way, in cottage gardens. It is supposed, however, to have been indigenous to North America; and its field cultivation with maize is thought to have been adopted from Indian practice. The pumpkin, besides being fodder for cattle and hogs, was no small item of old-time Yankee diet. In fact, an early rhymester, cataloguing "New England's annoyances," humorously declares,

"We have pumpkins at morning and pumpkins at noon;
If it was not for pumpkins we should be undone."

Paste of mashed pumpkin was, as we have noted, an added touch to true New England johnnycake. Pumpkin was also prepared as an independent dish by baking or stewing. It was sometimes kept, ready for use, in the form of long strips that had been dried by the fire; or in a mass that had first been stewed, then desiccated in the brick oven. Zealous spirits even got a poor kind of sirup out of it. The noblest product manufactured from the pumpkin was, of course, the pumpkin pie, sung by Whittier and "to every Yankee dear."

Beans were liberally grown and were often on the table. They were stewed, baked, or made into porridge. Genuine New England baked beans, it may be said here, have nothing in common with the pallid, liquescent messes frequently served today under that name, and most flagrantly in city restaurants. Bean porridge was a thick, rich soup, seasoned with fried pork (or more rarely with beef bones), pepper-pods, and salt. The beans were first softened by being soaked overnight in cold water; and after the other ingredients had been added, the porridge was fabricated by long, slow boiling. It could be "warmed over" indefinitely.

"Succotash" was as near as the early New Englanders could get to *msickquatash*, which was Narraganset for boiled corn-and-beans. Benevolently assimilated, like so much else, from the Indian aborigines, this mixture in its primary fashion was a kind of porridge made with bush beans and maize. These might be either fresh or dried. An author's footnote in "The Last of the Mohicans" shows that Cooper understood the dish—as prepared by Indians, at any rate—to be "composed of cracked corn and beans." The New England cook usually added a piece of pork; for nearly all of a Yankee pig save the squeal was in some way utilized.

In earliest New England, potatoes commonly were grown in gardens only, and did not appear in their own right as a leading item of everyday fare. Gradually, however, they came to be raised in quantity as a field crop. They were, practically from the beginning, an element of the "boiled dinner," which further included a large piece of salted beef, a cut of pork, the "pudding," and such vegetables of the domestic stock as beets, cabbages, carrots, and turnips. The pudding was a thin batter of corn meal and fresh milk, encased in a linen bag. When the water had reached the boiling point, the bag was suspended within the pot. The cooked pudding was eaten with cream (or sometimes with maple sugar and cream), thus answering the purpose of a dessert. It

would seem that the boiled dinner was almost as hardy a perennial as the boarding house turkey of modern jokesmiths. Having reappeared cold at supper (with, let us say, bread of some kind and in season a salad of chopped mustard leaves), it furnished the hash of next day's breakfast, and endured for a second dinner, refreshed with the pot broth and, if necessary, reinforced with a few beans.

Rye, wheat, and buckwheat were all extensively grown in early New England, and flour made from them was utilized in breadstuffs. In this connection it may be pointed out that not all of the early baking was in the comparatively familiar brick oven beside the kitchen fireplace. Either a "bake kettle" or a "tin kitchen" might be used. The bake kettle was a cast-iron pot with legs and a cast-iron lid. It was placed over a bed of live coals; the dough was laid on either the greased bottom or a baking plate; the lid was then put on and covered with live coals, which it was shaped to hold. The bake kettle gave much quicker results than the brick oven. Biscuit bread was ordinarily baked in it. The tin kitchen was a light utensil—of tin, as the name indicates; closed on all sides but that facing the fire; the top being curved or slanted downward and the bottom curved or slanted reversely. Whatever was to be baked was placed on a shallow pan supported within the tin-kitchen, and thus received direct heat from the hearth fire and reflected heat from the utensil. The collapsible aluminum reflector used today by campers is derived from the old-fashioned tin kitchen and works on exactly the same principles. Shortcake—a thin, flat, unsweetened cake, "shortened" with butter or lard and served hot, was frequently baked in the "spider." In certain rural communities of New England an ordinary frying pan is now colloquially known as a spider; but a spider is properly a deep, long-handled iron frying pan with legs, usually three, so that it may be stood in the coals.

Flapjacks were prodigious batter cakes cooked in a long-handled pan, and obtaining their name from the fact that they were skilfully "flapped," or turned in air, by being tossed from the pan and caught again. Before the wholesale destruction of the sugar maple, the making of maple sirup and maple sugar, now peculiar to Vermont, was rather common throughout most of New England. Many households annually made enough for their own use; and either the sirup or the pulverized sugar was applied to, or mixed with, a variety of victuals. One or the other was almost invariably a "spread" for the toothsome flapjack.

Wherever skim milk was fairly plentiful cottage cheese was in favor. Thus a by-product of the dairy was utilized for the making of a palatable, digestible, and nutritious food that lent variety to the bill-of-fare. Appreciation of cottage cheese and its possibilities was to a considerable extent revived in this country during the Great War through a campaign directed by the Department of Agriculture.

After a time, cultivated fruits furnished materials for pies; before that, wild brambleberries were used, as were also wild black cherries and even chokecherries, which for puckery taste are equalled by few other known things in nature. New Englanders brought the basic idea of pie from Old England, but they developed it and embroidered upon it with an almost unlimited ingenuity; and eventually they extended the term to "Washington pie," which is nothing more than two layers of sponge cake with pastry cream between them. In other parts of the country, a lugubrious visage was ascribed to the typical Yankee, the result (it was more or less jestingly said), in part, of Calvinistic theology and, in part, of indigestion caused by too much pie. So far as the pie is concerned, confirmation of this is perhaps had in the distinguished testimony of the "Autocrat of the Breakfast Table" that after an excess of pie he "wrote some sadly desponding poems, and a theological essay which took a very melancholy view of creation." "When," he adds, "I got better I labelled them all 'Pie crust,' and laid them by." Yet the "tranquil mirthfulness" of the Sage of Concord thrived upon breakfast pie.

The ancient rhymers to whom we have already referred, includes the following sarcastic particulars:

"If barley be wanting to make into malt,
We must be contented and think it no fault;
For we can make liquor to sweeten our lips
Of pumpkins and parsnips and walnut-tree chips."

Passable substitutes for tea could be found by the early New Englanders—not only walnut (i.e., hickory) chips, but white cedar (*arbor vitae*) chips, too; sassafras wood and the bark of the root; Oswego tea; the tender tips of hemlock branches; and dried leaves of the black birch. All these things, and many others, have been used by American pioneers. The very first comers to New England were not coffee drinkers; for the use of coffee did not become common in Old England until the middle of the seventeenth century and the first coffee house in

London did not open its doors until 1652. In due course, however, Yankee land contributed its share toward placing the per capita consumption of coffee in the United States at a figure about twelve times greater than that for the United Kingdom. Early New Englanders could devise substitutes for coffee from wheat, pulverized burnt bread, and parched corn meal. We have also encountered a reference to the use of a certain "evan root," described as "the fleshy root of a low-growing plant of which," says the account, "I wish I could give the botanical name, as I have no doubt it still grows in uncultivated swamps." "Evan root" is undoubtedly a provincial corruption of "avens root," the plant in question being what the books call water avens (the *Geum rivale* of Gray). "The freshly dug roots," the account further says, "were to be washed and boiled, and used in place of coffee; it had an aromatic and slightly pungent flavor, not much resembling coffee; but with plenty of milk and sugar it made a very acceptable drink."

Wild game was abundant in earlier colonial New England. Moose ranged in goodly numbers through the more northerly forests. Deer were plentiful in all the woods. So were wild turkeys; their flocks averaging, it is said, from twenty to forty members. Henry Oldys, of the United States Biological Survey, has stated that ruffed grouse (the New England "partridge") and bobwhites were even more numerous than the wild turkeys and "were regarded as too insignificant to spend powder on." "In colonial days," he says, "Massachusetts even placed a bounty on ruffed grouse to protect crops. The heath hen, or eastern prairie chicken, now [1910] confined to Martha's Vineyard and reduced in numbers to about 200, furnished an abundant article of diet to the colonists in New England and New Netherlands—so abundant, in fact, that articles of apprenticeship often specified that apprentices should not be compelled to eat its meat oftener than twice weekly. Pigeons were innumerable. . . . Dressed pigeons were sold in Boston for threepence a dozen."

Adriaen Van der Donck placed the market value of a prime buck in New Netherlands in 1653 at not more than \$1.20 in present United States currency, and frequently much less than that. It is probably safe to assume that very nearly the same quotation would be true for New England at the same period. Wildfowl were to be seen in plenty in the bays and inlets along New England's coasts, and upon its inland waters. Of both salt-water and fresh-water fish an excellent supply was to be had.

All this game and fish made cheap and excellent fare in early New England homes. Biologist Oldys, although granting that the occupation of the land by man necessarily resulted in permanent reduction of the amount of wild game, asserts with truth: "The recklessness with which the early colonists destroyed the game that filled this land to overflowing is astonishing, even though such wasteful methods are usual in a new country." He also cites unregulated trade in game as another factor contributing toward its decrease. As it has decreased (or even been exterminated) in all readily accessible places, its market value has risen. "From a time," says Oldys, "when bounties were paid for ruffed grouse and apprentices appealed from a diet of prairie chicken, we have reached the time when ruffed grouse are within reach only of the rich and prairie chickens are not to be had at any price." He might have added that the existing scarcity (or, in many cases, complete absence) of native game—which, had it been rightly conserved, would now be affording at small cost a welcome and wholesome variety of diet—is nothing short of anomalous in New England, in every state of which, as statistics show, the acreage of improved farm land has for years been steadily diminishing.

Cattle, sheep, or swine that had been brought to a pioneer community of New England were ordinarily held too precious to be slaughtered for food until such time as a further supply of animals had been well assured. After that, a "beef critter" would occasionally be slaughtered by its owner and shared with the neighbors. Some of the meat was very often "corned"—that is, cured with coarse granulated salt. In the speech of those times the word "corn" was frequently used in the sense of a small, hard particle; as of salt, powder, or sand.

In early New England, mutton, though never so favored as it had been in the old English home, was used to a considerable extent. The Yankee quickly found, however, that among domestic animals the pig furnished meat the most cheaply. Hams, shoulders, and bacon were cured by smoking in "smokehouses," where they were hung on hooks above a smoldering fire. The smokehouse was commonly an outbuilding, but might sometimes be a closet or small apartment within the dwelling and having a smoke vent opening into a chimney. Salt pork was, of course, made by pickling in barrels of strong brine. Sausage was manufactured from minced pork, highly seasoned with pepper, salt, and sage. Usually it was laid down in pans, covered with a thin coating of lard for protection from the air, and cut out in slices to be

fried. Headcheese (known in Old England as *brawn*) was composed of portions of the head, or of the head and feet, cut up finely, seasoned, boiled, and pressed into a mass somewhat like a cheese. Pickled pig's feet were esteemed rather a delicacy. In time, certain alien meat preparations, such as rolliches (which originated among the New Amsterdam Dutch) and scrapple (which took its rise among the Pennsylvania Germans) became known in parts of New England and were made there.

Pure food laws were not needed in early New England. Towns had not yet begun to grow apace, nor industries to develop and become centralized. Life was chiefly agricultural, and the subsistence of each farm group was produced almost exclusively upon its particular farm. Housewives then required no special guidance as to what was or was not safe to use; no list of approved products, such as, a few years since, was issued by one New England town. But certainly they did require culinary knack; for, past a doubt, in those times *good* cooking demanded greater aptitude and skill than it does today.

EFFICIENT ARRANGEMENT IN COOKING LABORATORIES

CHARLOTTE A. MORTON

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It is time that cooking laboratories were made as convenient as the modern kitchen. For many generations the housewife worked in an unplanned kitchen, with no analysis of processes and no thought of the relative position of operations. Often her kitchen was many times the necessary size, with storage center, sink, and stove so far distant from each other that she walked miles daily in accomplishing even the simplest work. Unfortunately, a large majority of these kitchens still exist. But under the leadership of those who have applied to their kitchens the principles of efficient arrangement, which of necessity are in application in any modern factory, women are demanding efficient kitchens in the new homes which are being built, and are rearranging the old kitchens when possible.

It is a part of every good home economics course to teach the close connection between efficient work and proper relative position of the

various processes involved. But, unfortunately, up to the present time, much the same conditions have obtained in cooking laboratories as those which for so many years made work so hard in most kitchens; namely, an arrangement which makes necessary much recrossing of steps; waste of space with greater distances to walk; and a relative position of operations different from that advocated in the home.

The hollow square arrangement has been the one most widely used. The advantage of this arrangement is that it places the student in a position facing the teacher who, from one position inside the square, can see what each member of the class is doing. But the teacher often must leave her position inside the square and go outside to help the individual student working on such operations as kneading bread; she also must go outside to attend parts of the equipment such as the range or supply cupboards; or to meet visitors. So that in the course of a lesson the teacher has a fatiguing road to travel. The fatigue is greatly increased by the fact that to arrive at the different points needing her attention, she must many times cross the track of students who must also leave their working positions to secure their necessary supplies. Teacher and student must wait for each other or squeeze past each other in narrow passageways, sometimes behind other students whose work is interrupted to let them pass.

Making the laboratory very large decreases this passage difficulty, but increases the number of steps to be taken, and does not affect the recrossing of paths; moreover, this way of overcoming the difficulty could not be used in small schools with limited funds, which often plan small laboratories with the hollow square, necessitating a painful amount of crowding and hindering of each other's work. Increasing the number of openings in the square itself decreases the crossing of paths, but increases expense, as it spreads out the class and makes more space necessary. Increasing the number of sinks in the room does more than anything else to decrease the amount of walking and consequent recrossing of paths; but, even if, as in the best laboratories on this plan, there is a sink to every four students, one group is working left handed toward the sink in a position which would never be advocated in a well arranged kitchen. To make these points clear, drawings have been made (1) of the laboratory actually in use in one of the best schools in the country; (2) of a projected laboratory which offers suggestions to overcome the difficulties shown in (1); and (3) a detail drawing of the working unit necessary in the suggested arrangement.

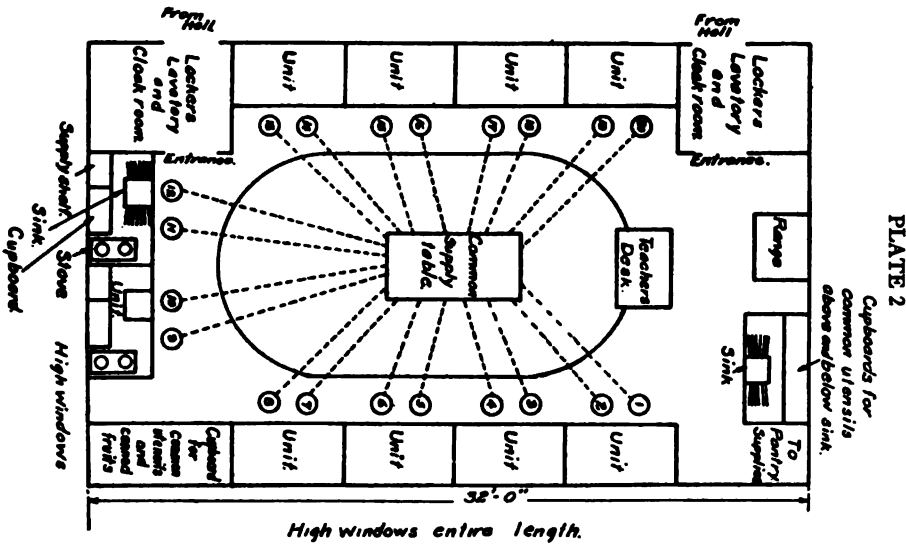
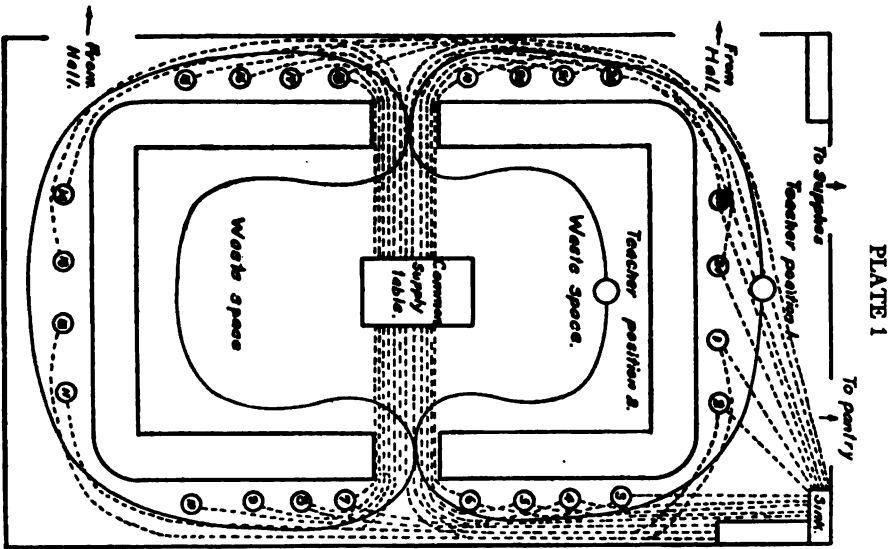
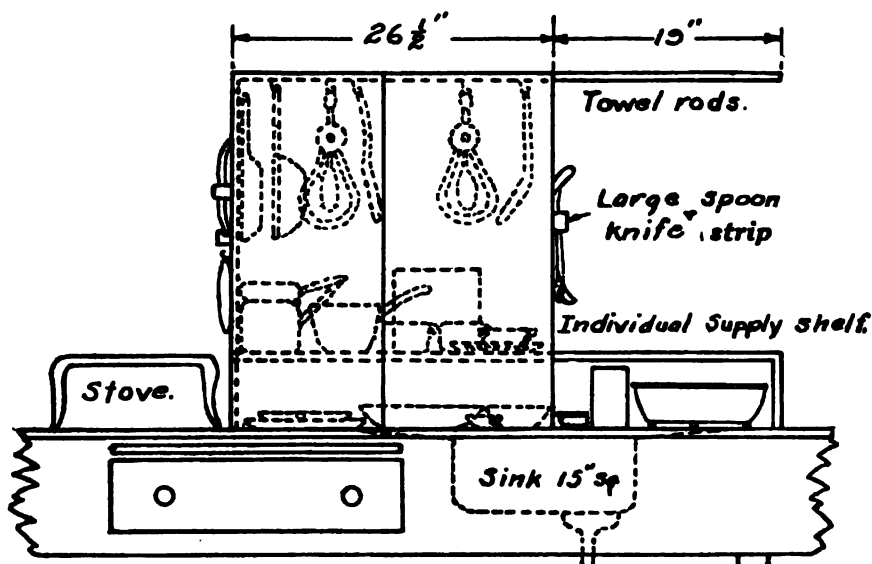


PLATE 3



In plate 1, which shows the hollow square arrangement that in this or a similar form is now in use in a majority of the cooking laboratories in our schools, note the course of the teacher, which is indicated by a solid line, from her various positions, in each of which she must place herself at least several times during each lesson. Contrast with that her main position in plate (2), where it will be seen that she can remain in a clear space in a position from which she can more quickly and easily reach the various points that will require her attention during the lesson. Her course around the room should also be clear after the class has obtained supplies and begun work.

In plate 2, which is merely an arrangement suggested to overcome the difficulties shown in plate 1, it will be seen that no recrossing of students need occur. Once, at the beginning of the lesson, the student leaves her position to secure supplies from the table directly behind her where monitors have placed them, as is customary before the lesson commences. Having obtained these, it will not again be necessary for her to leave her own unit; and the space behind her is left free for the teacher's passage. The objection might be raised that the expense of installing so many sinks is too great; but such an expense would be much smaller than that involved in unit kitchens, which are at present approved by many teachers.

Plate 3 is a detail drawing of the unit that may be arranged either as a group or individual unit. Note that in this unit the work progresses from right to left, with the same relative position of operations as should exist in any intelligently planned kitchen. The student obtains her supplies at the beginning of the lesson and places them on her individual supply shelf, which has the same relation to her sink as the pantry and refrigerator should have to a kitchen sink; she reaches into the wall cupboard directly in front of her for necessary utensils, a great advantage over the hollow square arrangement, where she must either pull out a drawer, necessitating a move from her working position, often using both hands to lift or rearrange the utensils to obtain those she wishes; or stoop uncomfortably to obtain them from low cupboards, the opening of whose doors again moves her from her working position.

When her food is ready to cook, she moves to the left and places it on her stove, then, while it is cooking, proceeds to clear her shelf and wash the dishes which, as the supply shelf has been cleared, have been piled there. From towel rods directly over her sink (pushed back against the cupboard when not in use), she takes her dish towels and cloth, and with plenty of water at hand she washes her dishes, cleanses her towels and hangs them over the sink to dry.

Space may be provided in the cupboard for cans of flour, spices, and other individual supplies; and, if desired, there may be an additional cupboard beneath the drawers, but this usually will be found unnecessary. The large utensils used by the entire class, or with only one to every four or more students, can be placed in large cupboards at the side or front of the room. The teacher will not be able to stand in front of the individual student in making suggestions. But if this point is carefully considered, it must be conceded that it does not outweigh the advantages gained by arrangement 2. In fact, there are many laboratories with other than the hollow square arrangement, which already have lost the advantage of the face-to-face position—such, for instance, as that in which the students work around large square tables, or in unit kitchens. Both of these last named arrangements are advocated by many teachers; but to the writer neither of them seems to solve the difficulties first outlined, namely, those of much walking on the part of the teacher, waste of space, and recrossing of paths.

It is hoped that neither housewives nor teachers will be bound by tradition when better conditions are obtainable which make for economy of energy and time and consequent better achievement.

STUDIES IN NUTRITION

FROM THE HOME ECONOMICS LABORATORY OF THE UNIVERSITY OF
WISCONSIN

VALUE OF FEEDING EXPERIMENTS

MARGUERITE DAVIS

In nutrition as in other divisions of science our knowledge is but an arrangement of observations. The part that feeding experiments have played in assembling these observations is familiar to all. Reaumur, in his study of digestion in 1765, was probably the first to use this method of investigation. Cholmers Watson in 1906 examined the changes in the tissues resulting from a long continued monotonous ration. In this country Beaumont's classic experiments in digestion were the first great contribution, while the extensive work of McCollum and his co-workers and of Osborne and Mendel has been most conspicuous in recent years.

We hope for much from this method in the future. There is first the problem of growth. That the change in mass from the egg of microscopic proportions to the adult is due to the food absorbed is well known. It is not so well understood that the changes in structure and composition also result from the food. We have conceded that milk was necessary for babies, but it has not been generally appreciated that food of proper quality was necessary after infancy.

Then there is the problem of the maintenance of individual organs. A chemical and histological examination reveals much more than records of maintenance, growth, and reproduction. In view of the fact that a large number of animals should be examined before a conclusion with regard to the ration is arrived at, and of the fact that a chemical and histological examination requires more time and skilled labor than the growth and reproduction records, it seems desirable to have rather extensive preliminary observations to serve as a guide for more intensive work.

It is feeding experiments which keep adding to the list of essential substances in the ration. Chemical analysis and our common experience with food showed the necessity for protein, but the carefully controlled experiments of Hopkins and Willcock showed the necessity for tryptophane. At present our only test for the three vitamins is the biological test.

In spite of the progress that has been made there are still many confusing factors. Clear cut results are the exception rather than the rule. An animal may be subnormal and recover without change in the ration, or it may be subnormal and not recover when taken off the experiment. Frequently the individual variations within a group are greater than the variations between groups.

On the qualitative side a ration may be unsatisfactory in two respects. It may lack some essential or it may contain a toxic substance. An essential, like magnesium, is toxic if present in too high a concentration. Since foods are complex, it is extremely difficult to obtain a ration which is uniform. With a ration which is not uniform it is difficult to determine to what factor the unsatisfactory results are due. The chief source of variations in the ration is the vitamins. Hess and Unger have shown that 10 grams of fresh young carrot contain as much of the antiscorbutic vitamin as 35 grams of fresh old carrot. Doubtless difference in soil causes a difference in vitamin content. It is well established that the vitamin content of milk is dependent on the animal's ration. Aside from the difference in the initial amount, there is the destruction due to aging. This destruction is very rapid for the antiscorbutic vitamin. Until some rapid method of quantitative estimation of vitamin is devised, a ration uniform with respect to the antiscorbutic factor is a practical impossibility. Furthermore, there is some evidence that both this and the fat soluble vitamin operate indirectly in that their absence induces a lowered resistance to infection from ordinarily innocuous bacteria. It is therefore a complicated matter to obtain accurate measurements of the comparative value of foodstuffs.

The fact that different animals give different results with the same ration has been used as an argument against feeding experiments. On the contrary, it is an advantage, for it gives additional information. Individual variations among human beings are as great as the different requirements of different animals.

A ration restricted to egg yolk carries the rat through growth and reproduction. On the other hand, the addition of egg yolk to the rabbit's ration shows this complete food for the rat to be toxic for the rabbit.

We are inclined to believe that many common foodstuffs may be toxic to certain animals if fed in sufficient amounts for a sufficient time. From what little data we have it seems that different foodstuffs do not manifest their toxic effects in the same manner. Therefore it is of interest to classify the foods with regard to their toxic effects.

We have mentioned the difficulty of obtaining uniform conditions within a single laboratory. When one seeks to compare the results of different laboratories, the difficulties are, of course, greater. Again it is the vitamins which cause the greatest confusion. This is particularly true when cooked or preserved food is the source of vitamins, especially of antiscorbutic vitamins. With cooked food it is important to know how it was cooked; how long; the state of division; the amount cooked at a time; if boiled, the amount of water; if baked, the temperature; and the interval between cooking and consumption. The data with commercial preserved food is of purely economic value for the conditions are not known.

Conflicting statements due to different conditions are bound to cause skepticism. Even so, we believe that all honest and careful work is good work and will have its place when order succeeds confusion. We even consider that it is an advantage to have different conditions in different laboratories, for when one comes to doubt the accepted principles a discovery may follow.

The writer would be very glad if there were a clearing house for data in feeding experiments. It would be necessary to have strict regulations to exclude experiments which were not properly controlled. It would seem that by pooling observations much of the error from conclusions from insufficient evidence would be eliminated. One reason for hasty conclusions is a desire for priority. Under the pooling system priority would not be so important as careful and complete experiments.

It would be a great help to a laboratory which serves the double purpose of investigation and instruction to work in connection with other laboratories. For investigation the resources of the laboratory are more profitable when concentrated on a small problem, except for preliminary work designed to indicate the relative merit of various small problems. For instruction less intensive work is desirable.

OBSERVATIONS ON VITAMINE CONTENT OF FOODS

MARGUERITE DAVIS AND COLLABORATORS

INTRODUCTION*

The experiments reported here are not primarily studies in vitamine content. They are long time experiments to determine the effect of prolonged feeding of a given amount of a given foodstuff. In the case of the guinea-pigs and rabbits, the oats, hay, salt, and water ration to which the foodstuff is added is lacking in the antiscorbutic vitamine.

The deficiency of this ration is reported by Hess and Unger,¹⁰ and by Hart, Steenbock, and Smith.⁸ Therefore, when our animals have exhibited the typical symptoms of acute scurvy in three weeks, we have considered that the added foodstuff did not, in the amount fed, contain sufficient vitamine to protect against scurvy. When, on the other hand, there is normal growth and reproduction we consider that the added foodstuff does contain sufficient vitamine. The intermediate conditions are often more difficult to determine. There is, for instance, a great difference between canned spinach and boiled onion. With the spinach-fed guinea-pigs, those receiving 15 grams daily are in better condition than those receiving 10 grams, while those receiving 20 grams are in better condition than those receiving 15 grams. On the other hand, although boiled onions unquestionably contain the antiscorbutic vitamine, and although 10 grams is unquestionably below the level necessary for complete protection, three lots of guinea-pigs on 10 grams, 15 grams, and 20 grams, respectively, were in equally poor condition at the end of 26 days.

We have more confidence in the beri-beri experiments with the pigeons. So far as we know, acute beri-beri results only from lack of the anti-beri-beri vitamine. To exclude other factors as far as possible we have fed the stock pigeon ration of equal parts corn, kaffir corn, barley, and split peas. This ration is heated in the autoclave at fifteen pounds pressure for 2½ hours. As the birds eat a normal amount, which is not the case when they are offered polished rice, and as grit is kept in the cages, the changes due to heating must be responsible for the deficiencies in the ration. When the addition of a fixed amount of a foodstuff (daily) prevents or delays the appearance of symptoms of beri-beri,

* Miss Davis' collaborators are students working under her supervision.

we consider the anti-beri-beri vitamine in the added foodstuff to be responsible. A gram of butter fat daily is given the pigeons receiving potato, as McCollum, Parsons, and Simmonds¹² have shown that potato lacks the fat soluble vitamine.

The following notes record the progress to date of the experiments.

EXPERIMENTS WITH VARIOUS FOODS

EFFECT OF HEAT ON FOOD

As stated above, the ordinary pigeon ration of corn, kaffir corn, barley, and split peas was heated in the autoclave for 2½ hours, at 15 pounds pressure and fed as the beri-beri producing ration. Since the pressure cooker is used in food preparation, it was considered of interest to feed a ration which was heated in it.

The 2 pigeons receiving the ration which had been heated in the pressure cooker 2½ hours at 15 pounds pressure developed beri-beri and died after 40 and 48 days, respectively. The 2 pigeons receiving the ration which had been heated in the pressure cooker 35 minutes at 15 pounds pressure were in excellent condition after 280 days.

EXPERIMENTS WITH CARROT

One pigeon received 2.5 grams of fresh carrot daily. It developed beri-beri in 43 days. After it had recovered with yeast, it received 5 grams of raw carrot for 67 days. Beri-beri again developed and the experiment was discontinued.

One pigeon received 5 grams of carrot canned in the laboratory. After 49 days the canned carrot was increased to 10 grams, because of the poor condition of the bird. It gained in weight and was apparently normal when, after 75 days on 10 grams, the pigeon was returned to the Genetics Department.

One female guinea-pig one month old received 5 grams of canned carrot and 5 grams of fresh cabbage. After 22 days the carrot was increased to 10 grams because of loss in weight. She gave birth to 2 normal young 88 days later. For 50 days she and her young received 60 grams of canned carrot and 5 grams of fresh cabbage for the three. The young grew at the normal rate. When 50 days old they received 10 grams of canned carrot and 5 grams of fresh cabbage each. Thirty-four days later the experiment was discontinued.

EXPERIMENTS WITH RAISINS AND WITH GRAPE-JUICE

Two pigeons received 2 grams of raisins daily. They died after 35 and 61 days, respectively, with no sign of acute beri-beri.

Two pigeons received 3 grams of raisins daily. One developed beri-beri in 59 days and died. The other received 4 grams of raisins on the 60th day and continued on this level for 90 days when the raisins were increased to 8 grams daily. It died 120 days later after a total of 270 days on the experiment.

One pigeon received 3 cc. of commercial grape-juice daily. Beri-beri developed in 30 days. The pigeon died.

One guinea-pig one month old received 3 cc. of the same grape-juice daily. Scurvy developed in 22 days. With the same pig, which had recovered on cabbage, 4 cc., 6 cc. and 10 cc. of grape-juice proved insufficient for protection against scurvy.

FEEDING EXPERIMENTS WITH MILK POWDER

Milk varies in its vitamine content. Its antiscorbutic value depends on the food of the cow, and is higher when the animals are in the pasture than when fed dried food. When the milk is first drawn its antiscorbutic content is generally high, but decreases rapidly on standing. Moreover, the exposure to heat in pasteurization (which is necessary to destroy any possible pathogenic bacteria and to make it safe for infant consumption) lowers the antiscorbutic value. The ordinary milk supply is therefore unreliable, and for this reason milk powders have been introduced into infant feeding.

From recent investigation by Chick and Hume, Hart and Steenbock, and Hess and Unger, it is seen that fresh milk given in sufficient quantities will protect guinea-pigs against scurvy. Chick and Hume² found that partial protection was afforded when each guinea-pig received 50-100 cc. certified milk, delivered in 24 hours, in addition to a basal ration of oats and bran, and that by the addition of 100-150 cc. scurvy symptoms were entirely prevented. Hess and Unger³ found that only 80 cc. fresh milk, per individual per day, was necessary when superimposed on a ration of hay, oats, and bran. Hart, Steenbock, and Smith⁴ using the same basal ration found that 100 cc. entirely prevented scurvy, while 30 cc. prevented the onset of scorbutic symptoms for 18 weeks.

For a long time it has been conjectured that heated milk was low in the antiscorbutic property. Recent experimental work has definitely

shown that milk, like other foodstuffs, loses its ability to protect against scurvy when heated, and the degree to which the antiscorbutic factor is destroyed depends on the degree of heat and the time of exposure to it.

Hart, Steenbock, and Smith⁸ autoclaved fresh, whole milk at 120°C. for 10 minutes and found that with an ingestion of 47 cc. per day scurvy occurred in 7-9 weeks, whereas 30 cc. fresh milk prevented the onset of scurvy for 18 weeks.

In regard to powdered milks, the results of investigators differ. Hart, Steenbock, and Smith⁸ accord them little value. Guinea-pigs, given powdered skimmed milk the equivalent of 40-45 cc. fresh milk, show typical scurvy in 5-6 weeks; on 75-90 cc. the onset is prevented for 5-15 weeks. Barnes and Hume¹ show that dried milk, given in amounts equivalent to 100-150 cc. fresh milk, was unable to protect against scurvy. Experiments on monkeys showed that 150-175 cc. fresh milk was necessary to protect from scurvy these animals weighing 2-3 kgm., whereas the corresponding ration of dried milk *freshly* manufactured by the Hatmaker process is from 250-300 cc. Hume therefore concluded that the corresponding amount of dried milk necessary for a guinea-pig would be equivalent to 200 + cc., an amount too large to be consumed by an animal of 300-400 grams weight. Hess and Unger, however, consider that little of the antiscorbutic vitamine is lost in the Just-Hatmaker process. This statement is confirmed by finding that infantile scurvy could be cured by giving dried milk prepared by this method.

There are difficulties in feeding milk to guinea-pigs. They do not like milk, and they do not require a large amount of liquid. Consequently it is hard to get a guinea-pig to consume enough milk to protect against scurvy. In feeding powdered milk, this difficulty has been met by mixing the powder into a paste. Some days the entire amount given was ingested; other days a small amount was left. It was impossible to determine the exact amount eaten.

We have obtained growth and reproduction and the prevention of scurvy on 20 grams milk powder prepared by the Hatmaker process. This is equivalent to about 150 cc. fresh milk.

Oats were offered only occasionally, in order that the pigs might eat more milk. Hay and salt constituted the basal ration. The fact that two generations have been born on the ration without showing signs of scurvy gives evidence of sufficient antiscorbutic in the diet. The ration is too concentrated for guinea-pigs which might account for the frequency of abortion. In the case of the last two litters, oats and bran

were added two weeks before parturition. Guinea-pigs on the ration seem to thrive, and the only animal of the second generation in turn gave birth to three, two of which are living.

Our data on condensed milk are in accord with the data of other investigators. Scorbutic symptoms appeared in 4 weeks on 75 cc. condensed milk. Steenbock and Smith⁸ obtained scurvy in 30-40 days when they fed 36-52 cc.

Condensed milk supplies little antiscorbutic. Dried milk (Mam-mala) can be used as the only source of antiscorbutic in an otherwise satisfactory diet. It is wise, however, to use in infant feeding an additional food which contains the antiscorbutic factor, such as orange juice.

FEEDING EXPERIMENTS WITH POTATO

Vedder and Clark¹⁸ fed 4 fowls as much polished rice as desired and 10 grams of raw potato daily. One developed beri-beri in 32 days, 1 in 38 days, and the other 2 remained well after 63 days when the experiment was discontinued. They fed the same number of fowls, under the same conditions 10 grams of boiled potato. One developed beri-beri after 25 days, 1 after 59 days, and the other 2 remained well after 63 days when the experiment was discontinued.

We have fed one pigeon on a ration of autoclaved grain, 1 gram of filtered butter fat, grit, and raw potato for 440 days. The filtered butter fat was added after 200 days on the experiment. (For amount of potato, see table 4.)

Of 5 other pigeons, one has received raw potato for 343 days, and one has received baked potato for 343 days. Another pigeon on baked potato developed acute beri-beri after 248 days on the ration and died. Of the 2 pigeons on boiled potato, one developed acute beri-beri after 210 days on the ration. It recovered on yeast and has been back on the ration for 94 days. The other pigeon developed acute beri-beri after 250 days on the ration. It recovered on yeast and has been back on the ration for 90 days.

These experiments indicate a loss in anti-beri-beri vitamine as a result of ordinary methods of cooking.

Preparation of potato: A small potato was baked daily at a temperature of about 300° for 20 minutes. Potato cut in small pieces was boiled with skin for 15 minutes. (See table 4.)

TABLE 1
Animals put on ration

MILK DAILY	NUMBER OF ANIMALS	SERIAL NUMBER	WEIGHT		NUMBER OF DAYS	APPROX- IMATE NORMAL GROWTH	REMARKS
			Initial	Final			
<i>grams</i>			<i>grams</i>	<i>grams</i>		<i>per cent</i>	
20	2 males	62	324	801	366	85	No scurvy
		63	333	740	366	85	Condition apparently good
	2 females	66	225	722	326	50	After 110 days gave birth to 3 young. One lived—No. 80. After 208 days abortion.
		67	241		326		Abortion after 96 days and 150 days. After 280 days 5 young born—2 living

Growth and reproduction is secured on milk powder.

TABLE 2
Animals born on ration

MILK DAILY	NUMBER OF ANIMALS	SERIAL NUMBER	WEIGHT		NUMBER OF DAYS	APPROX- IMATE NORMAL GROWTH	REMARKS
			Initial	Final			
<i>grams</i>			<i>grams</i>	<i>grams</i>		<i>per cent</i>	
20	1	80		680	214	100	Born on ration of No. 66. Growth normal. At 214 days gave birth to 3 young. 1 died
	2			247	27	100	Young of No. 67
				245	27	100	Normal growth

Young born on ration show normal growth on milk powder.

TABLE 3
Third generation on ration

MILK DAILY	NUMBER OF ANIMALS	SERIAL NUMBER	WEIGHT		NUMBER OF DAYS	APPROX- IMATE NORMAL GROWTH	REMARKS
			Initial	Final			
<i>grams</i>			<i>grams</i>	<i>grams</i>		<i>per cent</i>	
20	2			208	31	75	Young of No. 80
				178	31	75	Growth 75 per cent normal. No scurvy

The third generation born on the ration show no scurvy. Growth is only 75 per cent normal.

TABLE 4
Pigeon data

POTATO DAILY	NUMBER OF ANIMALS	SERIAL NUMBER	WEIGHT		NUMBER OF DAYS	REMARKS
			Initial	Final		
			grams	grams		
<i>Raw</i>						
2 grams	2 pigeons	{ 11			67	Died
		12			70	Increased potato to 5 grams.
5 grams	2 pigeons	{ 12		255	140	Increased potato to 8 grams.
		13	380	280	110	Increased potato to 8 grams.
8 grams	same pigeons	{ 12	255	281	233	In progress
		13	280	264	233	In progress
<i>Baked</i>						
5 grams	2 pigeons	{ 16	402	275	110	Increased potato to 8 grams.
		17	455	315	110	Increased potato to 8 grams.
8 grams	same pigeons	{ 16	275	250	138	Died—acute beri-beri
		17	315	228	233	In progress
<i>Boiled</i>						
5 grams	2 pigeons	{ 14	360	235	110	Increased potato to 8 grams
		15	435	270	110	Increased potato to 8 grams
8 grams		{ 14	235	208	140	Acute beri-beri. Recovered with yeast
	same pigeons	{ 15	262	246	90	Returned to ration. In progress
			270	195	89	Acute beri-beri. Yeast given.
						Off ration for 60 days
			296	210	94	Returned to ration. In progress
<i>Commercial dried</i>						
2 grams	2 pigeons	{ 18	330	253	36	Acute beri-beri. Died
		19	307	249	36	Increased potato to 4 grams
4 grams	1 pigeon	19	249	268	71	In progress

Chick and Rhodes⁸ found that 17 grams of steamed potato gave slight protection, and 20 grams gave complete protection against scurvy. Givens and Cohen⁶ found that guinea-pigs fed boiled potato equal to 5 grams raw potato developed scurvy in 28, 25, and 27 days.

Our experiments indicate that potato can be the sole source of anti-scorbutic vitamine, but we have not determined the amount necessary. Four grams of raw and 20 grams of boiled potato are not sufficient for reproduction. For our results with smaller amounts, see table 5. The boiled potato was prepared the same way as for pigeons.

TABLE 5
Guinea-pig data

POTATO DAILY	ANIMAL	SERIAL NUMBER	WEIGHT		NUMBER OF DAYS	REMARKS
			Initial	Final		
			grams	grams		
<i>Boiled</i>						
5 grams	1 guinea-pig	18	410	580	73	Increased potato to 8 grams
8 grams	1 guinea-pig	18	580	732	233	In progress
4 grams raw and 4 grams boiled	1 guinea-pig*	19	665	787	240	
<i>Boiled</i>						
8 grams	1 guinea-pig†	23	313	657	112	
<i>Boiled</i>						
8 grams	1 guinea-pig‡	24	369	503	99	Increased potato to 20 grams 7 days before parturition.

* Litter of 2 after 81 days on experiment. Young at 34 days given 8 grams boiled potato (see Nos. 23 and 24). Second litter of 4 after 214 days experiment. Two died on fifth day. Postmortem of young. Gums haemorrhagic. Lesion and haemorrhage of femur.

For first litter 6 days before parturition to 34 days after, boiled potato was increased to 20 grams. For second litter boiled potato was increased to 40 grams for 3 days after parturition.

† Young of No. 19. Growth normal for 70 days, then maintenance. Hind legs stiff when 145 days old.

‡ Young of No. 19. Litter of 3 when 131 days old. Two young died on fifth day. Ration discontinued on fifth day after parturition. Third young died on ninth day.

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SUGGESTIONS FOR THE TEACHING OF TEXTILES IN ELEMENTARY AND HIGH SCHOOLS

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The judgment of textile materials cannot be well taught except in connection with the natural use of the fabrics. Much of the knowledge can be acquired only through familiarity with cloth of various kinds.

The specific articles made in any two classes in sewing, garment-making, dressmaking, or millinery would not be the same, but would be determined by the type of pupil, by the needs of the group, by the economic situation, and by the organization of the curriculum. Hence the textile study would vary accordingly in the order of presentation of subject matter and the method of attack.

The foregoing statements make it clear that a suggestive course in textiles must be outlined in large, elastic units, ready to be adjusted to the exigencies of the situation, appealing to the pupil's interests when he sees a real need for acquiring the information.

The judicious use of texts and suitable references strengthens the work with pupils of all ages.

THE ELEMENTARY SCHOOL FOR BOTH BOYS AND GIRLS

The aim of such a course in the elementary school should be to acquaint children with the characteristic properties of the four textile fibres as found in materials commonly used, to help to a rough identification and a knowledge of their general uses, and to give children a knowledge of the raw products and the main processes through which the four fibres must pass in preparation for their manufacture into cloth.

Grades 1, 2 and 3

In the first three grades the children should learn to roughly identify cotton, silk, and wool by choosing their own materials for doll clothes,

and by feeling of their own clothing and frequently naming cloth when handling it. Knitting such articles as stripes for dolls' afghans or blocks for baby blankets out of woollen yarn gives a knowledge of its feel.

The children may get an understanding of the manufacture of woollen cloth through carrying on these processes in the schoolroom. Wool may be cut from the pelt, washed, carded, dyed, and spun in the fingers. A demonstration of spinning on the spinning wheel or, better still, practice on the spinning wheel by the children, themselves, may be supplemented by pictures of various kinds, making the spinning devices intelligible. Understanding of the factory processes may be acquired by the use of the reflectoscope, stereoscope, slides, moving pictures, or visits to industrial exhibitions or factories when possible.

Weaving of short lengths that can be used for rugs, mats, or bags gives a knowledge of cloth structure which makes it easy for children to understand how striped, checked, and plaid materials are made and how different weights of warp and woof will affect the material.

Handling of materials in cutting and sewing makes its own impressions. Frequent references to warp, woof, and selvedge are essential to make the children familiar with them.

Knowing how to knit gives a foundation for judging of knitted materials and a background for stockinet darning in the upper grades.

Grades 4, 5 and 6

The children of these grades should be given freedom in selecting materials for their own sewing problems whenever possible. Judgment will thus be developed naturally.

A permanent school exhibit of common textile fabrics can be made by one or more classes contributing samples, mounting and labeling them with the name of the fabric and the price per yard (if made by older children). These should be classified according to the fibre from which they are made and further grouped as to uses.

Weaving on looms made by the children themselves to carry cotton warp of light weight makes it possible for children to work out decorative weaves, such as stripes or checks. By the use of the warp and cloth beams long pieces like hat bands, sleeve bands of school colors, or belts may be woven. A class problem on the Colonial loom gives each child an opportunity of imagining himself in the home factory of the period. After such experiences the girl or boy can understand the devices used in the modern loom. Pictures of various kinds, textile exhibits, and

visits to factories are all helpful. A collection of samples of materials of fancy weaves will be interesting for the children to analyze to determine how designs are effected.

A study of comparative strengths of materials and the methods for testing warp and woof with thumb pressure gives a basis for selection of materials suited to various uses.

A study of the production of cotton, flax, and silk should be inserted wherever such study will best vitalize geography, history, and other subjects. Reference reading, pictures of various kinds, and industrial exhibits should be freely used to make the subject most interesting.

Distinction between cotton and linen should be given with a discussion of their adaptability to uses; cotton as a legitimate and illegitimate substitute for linen should also be discussed.

JUNIOR HIGH SCHOOL GIRLS

The aims of the work for the junior high school girls would include the two aims given for the elementary school, with the addition of these:

To teach girls to analyze their needs, their own individual appearance and their budgets in preparation for the selection of a garment.

To teach girls the wise selection of clothing from the standpoints of health and beauty.

To give girls a basis for wise judgment of household linens and bedding.

To give older girls an understanding of the methods by which certain "fancies" are made often at the expense of durability.

The work outlined for the elementary school, should be covered in the high school in the case of classes that have not yet had the work. In any case the information should be recalled in brief, for instance, when working on underwear, a critical study of the various materials suitable for underwear will recall the structure of the material, the characteristics of the fibre, and the adaptability to various uses. Tests for strength, washing out sizing, and counting threads to the inch by the use of a magnifier give one a good basis for judgment of quality. Children should handle both cheap and strong materials in order to fully appreciate quality. Attention directed to the widths of materials when cutting will help them to judge of economical widths.

Microscopic study of the fibres, the weighting of fabrics, the use of substitute fibers, an explanation of the legitimate use of shoddy, mercerization, burning tests, analysis of weaves and finish, will all help the girls to judge of materials and their comparative values. Microscopic

and chemical tests for identification of fibres in mixtures, tests for weighting, for fastness of dye and shrinkage, should be inserted whenever needed. Such tests can be found in various texts. This study may grow out of a need for school dish towels or napkins or preparation for buying of dress materials.

Lessons in laundering and cleaning are very valuable. In addition to giving the girl a knowledge and skill that will help her as a life-long asset, they help her to judge of the way various materials and qualities respond to laundering, to realize what kind of wear laundering requires of garments, to exercise a wiser care of her clothing, and to respect the skill and service of a laundress.

Parallel to laundering blankets or woolen flannels, pressing woolen clothing or making garments out of woolen materials, a careful study of the manufacture of both woolens and worsteds is easily grasped.

A study of production of silk, the various methods of adulterating silk materials, the accepted use of artificial silk for hose and dress trimmings, all tend to make the girls wiser consumers and more anxious to know facts upon which wise buying depends. Such a knowledge requires an intelligent suspicion of misrepresentation and insures a willingness on the part of the consumer to pay for materials that will stand hard wear. Time and labor are too valuable to waste on shabby materials that, even when new, do not appear well.

The skill of the manufacturer in misleading the purchaser will help to make every girl conscious of a need for legislation against misrepresentation and a need for a few materials manufactured according to specifications. Such study may be inserted in relation to seasonal buying of suits, coats, or dresses. Comparison of various experiences as to economy of various qualities of woolens and worsteds may stimulate the keeping of a class record of the life of all dresses, suits, and coats purchased by members of the class. This would lead naturally into a study of a well planned wardrobe and a clothing budget. Making the most of one's personal appearance should be studied with the coöperation of the Art Department. The hygiene of clothing is closely allied and may be taught in coöperation with the Department of Physical Education.

To learn something of the research work in textiles that is being done in colleges, in textile schools, in stores, and in commercial laboratories will tend to give the girls an intelligent attitude toward textile study, a desire to participate in further investigations in high school, and possibly a special interest to follow in college.

THE PRESENT STATUS OF MISBRANDING ACTS AND OTHER TEXTILE LEGISLATION¹

That there is need for protection of the consumer of textiles, no woman who buys and wears clothing will deny. When the shine washes off the linen table cloth and the weighting cuts holes in her silk dress, she knows her linen is cotton and her silk half tin, but she has no recourse. As a matter of honesty and right dealing, the question of pure textiles has always been important, but with the present prices it is imperative that the consumer be protected from frauds in fabrics. Processes of adulterating fabrics are being perfected and their use constantly increased until experienced buyers themselves cannot determine true values; the schools do not yet reach all women with the training which will teach them to know materials, and the women in the low income group who most need protection from fraud have none.

With the passage of the Pure Food Act in 1906, the Interstate Commerce Committee of the U. S. House of Representatives instituted the type of federal legislation which gives protection to the consumer by regulating interstate commerce in foods. A law of this kind, of course, does not reach intrastate commerce, but, following the initial passage of such an act by Congress, there is a tendency for the states to enact similar or identical laws and thereby give uniformity to the legislation throughout the country.

In the last ten Congresses pure fabric legislation has been agitated at least three times and at least twelve bills have been presented but have failed of passage because they were ineffective or without merit.

In 1916 Representative Alben W. Barkley of Kentucky introduced into the House a bill patterned very closely after the British Merchandise Marks Act which for thirty-two years has been in successful operation in the United Kingdom and in most of the British colonies. Legislation relating to the war and the railroads prevented consideration of the bill by the committee and action by the House until the beginning of this year when the so-called Truth-in-Fabrics legislation again began to attract attention.

There have been introduced into the present Congress at least six bills which relate to fabrics.²

¹ From the Committee on the Standardization of Textiles of the American Home Economics Association.

² Copies of these bills may be secured by writing to the House Document Room.

The French Bill (H. R. 11641) and the Capper Bill (S. 3686) are identical, having been introduced simultaneously into the House by Mr. French and in the Senate by Mr. Capper. The bill aims "to prevent the deceit and profiteering that result from the unrevealed presence of substitutes for virgin wool in woven fabrics purporting to contain wool and in garments or articles of apparel made therefrom." The general opinion seems to be that some of the effects of this bill would be to benefit the wool grower, to work a hardship on the manufacturer, to require federal appropriations for its enforcement, and to increase the price of clothing to the consumer by raising the price of new wool.

The Kreider Bill (H. R. 9283) prohibits "fraud upon the public by making or disseminating false statements or assertions concerning any merchandise, commodities, securities or service" and provides penalties for the violation of the act. The bill does not include definitions nor is it as comprehensive as the other bills, being aimed particularly at fraudulent advertising.

The Barkley Bill (H. R. 2855) prohibits the manufacture, sale, or transportation in interstate commerce of misbranded articles, regulates traffic therein, and penalizes violations of the law.³

The Rogers Bill (H. R. 13136) is very much like the Barkley Bill, with the exception of certain sections which deal with trade-marks and trade descriptions. It also provides for larger penalties for violations of the law.

The Interstate Commerce Committee held hearings on these bills (with the exception of the Kreider Bill which was referred by the House to the Committee on the Judiciary) from March 18 to March 31. The American Home Economics Association was represented by Miss Ina Pitner, who presented the cause of the consumer. The Association was also asked to prepare a statement to be incorporated in the published report of the hearings.⁴

As a result of the testimony offered at the hearings, the Interstate Commerce Committee seems to feel that the so-called Truth-in-Fabrics Law (The French-Capper Bill) might not give the desired results, but that legislation along the lines of the Misbranding Acts (The Rogers and Barkley Bills) is the kind of constructive legislation which the

³ See "Recent Work of the Committee on the Standardization of Textiles" in the *JOURNAL* for March, 1920. See also *Textiles*, July, 1919, and *The National Clothier*, August, 1919.

⁴ The Report of the Hearings may be secured by writing to the Secretary of the Interstate and Foreign Commerce Committee, House Office Building, Washington, D. C.

public needs. For this reason, it is expected that such a bill will be reported out by the Committee and an effort made to bring it before the House before its adjournment. Special effort is needed to get action before the close of a crowded session, and home economics people who are interested in the passage of the bill should make their interest known to their representatives as soon as the Bill is reported in the House.

PETTICOAT LANE TO PROSPERITY

The silks for the petticoats to be used in the wearing test reported by the Committee on the Standardization of Textiles in the March number of the JOURNAL are now on the looms. We expect the eight hundred skirts will be ready for distribution about the first of June. For the leaflet giving details of sizes and prices, send to the Committee's manager, Miss Ina K. Pitner, Crescent Place, Short Hills, New Jersey.

Very briefly, the silks are taffeta and messaline, three grades of each. The color of all the silks is identical, changeable navy blue and green. The same design is used for all the skirts. The workmanship is excellent. The prices range from \$9.50 to \$12.00. The skirts will be sent out in lots of five or more to one address, cash being required with the order. The leaflet contains full details. The quality of the skirts is higher than it would be possible to secure at a retail store for the same price. Purchasers will be asked to keep a simple record of wear and send it to the Committee on request.

The profits will be used to finance the growing work of the Committee. Orders will be filled in the order in which they are received.

It is time for the public to take a new viewpoint on the waste of natural gas. It is time for the domestic consumer to realize that his duty is not done when he cries out against the flagrant wastes occurring in the gas fields, and demands of his Government that such wastes be abated; he must realize that he himself is likewise at fault and that it is time for him to set his own house in order. Furthermore, the domestic consumer must realize that these wastes do not concern him alone, and that he has not the right, merely because he pays for the gas, to employ it in any manner that pleases him, no matter how wasteful this may be. Natural gas is a natural resource in which every inhabitant of this country has an equity. Those who waste the gas do so at the expense of others who would use it efficiently. Natural gas is not replaced by nature, and in comparison with the life of the nation the duration of the supply will be brief. The public has a right, therefore, to demand that this natural asset be used to the greatest advantage of all. Natural gas in each city is a community asset and every consumer has a right to demand that wasteful use shall be prohibited in the interest of the public service. This is particularly important during cold spells in the winter when the supply is insufficient and actual suffering may occur. It is not right that any consumer suffer at such times because of the extravagance and waste of other consumers, even though they are willing to pay for the gas wasted. Nor can the citizens justify demands for better service from the public utility companies without making provision for the correction of abuses in their own homes. The public has been and is to-day just as much a party to the crime of wasting this natural resource as are the companies that produce and market it.

Mr. Samuel S. Wyer, a consulting engineer, who was chief of natural gas conservation of the Fuel Administration during the war, called attention to the tremendous waste of gas between the field and the ultimate consumer's meter, averaging about 35 per cent of the total gas reduced to possession at the wells, and to the tremendous waste of gas by the domestic consumer, averaging about 80 per cent of the total amount of gas received. Mr. Wyer feels that it is impractical to now correct much of the waste of gas in the field due to the fact that the expense involved would increase the cost of the gas so materially as to render its domestic use almost prohibitive. Yet to reduce the waste in the home it is necessary to make the gas worth saving by increasing somewhat the price of the gas. Increasing the price will not increase the

revenue of the gas company because, as is proved by reports, as the price of gas goes up the amount used by the consumer is lessened.

He referred to a study, made in the Home Economics Department of Ohio State University, of the relative cost of five fuels for cooking a dinner. The dinner cooked consisted of steak, scalloped potatoes, spinach, bread, butter, rice pudding, coffee, cream, and sugar, with portions for six people. The fuel cost was taken as follows: Natural gas \$1.00 per 1000 cubic feet; soft coal \$6.50 per ton, delivered to the house; gasoline 27 cents per gallon; coal oil 15 cents per gallon; electricity 3 cents per kilowatt hour. The natural gas used with properly directed short flame cost 1.1 cents with 1 to 2 ounce pressure; 2.2 cents with 4 to 5 ounce pressure and long flame; 2.5 cents with soft coal; 4.6 cents with gasoline; 5 cents with electricity; and 5.4 cents with coal oil. Natural gas then should be conserved for cooking purposes not only because of its convenience but also because it is an economical source of fuel.

Mr. Wyer claims that there are three main sources of waste in the home, which, if stopped, would add from fifteen to twenty years to the period that natural gas will be available for domestic use.

The first waste to be corrected is the amount of gas lost through leaking pipes and fixtures in the home. It is estimated that fully one-sixth of the gas which passes through the house meter is lost. That is, for every 1000 cubic feet registered through the meter 165 feet is never burned. For every dollar paid for gas, 16 cents is thrown away.

A second large waste of gas is in the use of inefficient heating and cooking appliances. When a coal furnace is used for burning natural gas only 25 per cent of the gas is utilized; 75 per cent of the gas is wasted. If the coal furnace is converted into a natural gas furnace 75 per cent of the gas is utilized. That means that in a properly constructed furnace one foot of gas will give as much heat as three feet did with the old wasteful type of furnace. With rightly constructed apparatus natural gas at \$1.00 per thousand would cost the consumer no more than 33 cent gas does now. It would yield no more revenue to the gas company and would prolong the period of the supply of natural gas.

The natural gas cook stove with solid top and low set burner, usually more than 2½ inches below the cooking vessel, wastes 87 per cent of the gas brought to the stove. The artificial gas stove gives the same amount of service with one foot of gas that the natural gas stove does with 3 feet of gas. If it is not possible to use the correct type of stove the natural gas stove may be converted by:

Raising the manifold and burner supports so as to bring the burners to the proper height below the cooking vessel, or, preferably in some stoves, cementing a new burner casting on top of the existing low burner. If neither of these methods is practical it is possible to put a few nails or triangular pieces of thin sheet iron in the burner slots so as to have a support on which to rest the vessel. The principle involved is to have the vessel come in contact with the blue tip of the short flame. The yellow flame is wasteful because all of the gas delivered is not converted into heat. The blue flame gives the most heat. The burner should have holes drilled so as to allow the gas flame to burn straight to the cooking vessel.

No cook stove should be used with a closed top as it wastes the gas, but the top should be of the grid or skeleton type. The cook stove should be clean. That means that the person who uses the stove should know how to care for and how to use it properly.

The pressure of gas is likely to vary and in order to burn the least amount of gas there should be no blowing of the burners or any hissing sound. Hissing may be stopped by partially closing the gas cock.

When the pressure of gas is low it is necessary to use a large sized spud. A spud is the small opening immediately in front of the gas cock through which the gas passes into the mixer. Some stoves have adjustable spuds, others must either have new spuds or have the small opening made larger. With proper sized spud and the vessel placed about $1\frac{1}{4}$ inches above the burner it is possible to obtain satisfactory cooking results with pressure as low as $\frac{1}{16}$ inch of water pressure. This produces the short flame about $\frac{3}{8}$ inch long. The cooking can be done in the normal time and with less gas than would be used with the long flame and high pressure which is generally from 4 to 6 or 8 ounces of pressure.

Most incandescent mantle lamps are not properly adjusted and use much more gas than is necessary, usually 50 to 75 per cent more than would be required with proper adjustment. A hissing or roaring sound from the lamp is a sign of excessive consumption. The ordinary open flame burner, which requires $2\frac{1}{2}$ times as much gas to give the same amount of light as the incandescent mantle, is still in frequent use.

The third source of waste is in the burning of gas when it is not needed. One incandescent mantle lamp burning all the time for one year would consume 43,800 feet of gas; three such lamps would waste enough gas to supply one domestic consumer for a year. Many street lights are fitted with such mantles and kept burning all the time.

The leakage from gas fixtures if only one foot per hour will mean 8769 feet per year, a month's gas supply for the average family.

After Mr. Wyer's talk there was a general discussion, and the opinion of the conference was expressed in the following resolutions:

WHEREAS, The supply of natural gas is limited in quantity and is not being replaced by Nature, and

WHEREAS, There is no other fuel that can replace natural gas which is as cheap, as convenient and as efficient, and

WHEREAS, The supply of natural gas is failing in many communities; be it

Resolved, In order that the supply of natural gas may be prolonged and the service improved, this Conference recommends that the appropriate agency in each State which uses natural gas take measures to discover what amount of natural gas is now being wasted by the consumer, and the various causes of such waste, and adopt such measures as may be available to reduce such wastes and effect economies in order that the benefits from this natural resource be prolonged; and be it further

Resolved, That the appropriate agencies, both State and Federal, be urged to stimulate research in perfecting means and methods for a more efficient use of natural gas; and be it further

Resolved, That the appropriate State and Federal agencies be urged to conduct educational campaigns to instruct consumers and the public in the importance of the wastes of natural gas; how economies in the use of natural gas may be effected, and on the natural gas situation in general, that the public may be informed on the subject and deal with it in the most intelligent manner; and be it further

Resolved, That every effort be made towards arriving at understandings between the natural gas industry and the communities using natural gas as to how the supply of natural gas can be best conserved and its life prolonged; and be it further

Resolved, That a committee of ten be appointed by the Chairman of this Conference to represent the natural gas industry, and the public and Federal institutions to cooperate with the Director of the Bureau of Mines in working out a constructive program for the conservation of natural gas and the bettering of the natural gas service, and in collecting and distributing information on this subject.

Every home keeper and teacher in gas consuming states should have a copy of the Bulletin published by the Department of the Interior, "Waste and Correct Use of Natural Gas in the Home." Every person interested in home keeping should know what natural gas cooking appliances are efficient, how to care for and how to use them.

HOMEMADE VERSUS READY-MADE CLOTHING

KATHERINE CRANOR

Professor of Household Arts, James Millikin University, Decatur, Illinois

With the present cost of clothing materials most women must consider more than ever before the question of how to be well dressed at the least possible expense. One step toward thrift in clothing and one of the best means of stretching the clothing allowance is to make one's own garments. When the cost of making does not have to be added to the cost of material the same money will provide a garment of much better materials and workmanship. When clothing is made at home, one-half or two-thirds the cost may often be saved. A dark silk dress for example, of fair material and workmanship, if it is a garment of distinctive style, will cost anywhere from \$60 to \$125. Four or five yards of material will make the dress; \$5 per yard will buy silk of far better quality than is used in the best of the ready-made garments. Five dollars, or ten at most, should cover the cost of buttons and other trimmings, thread, and findings for the average dress, making the total cost of materials from \$25 to \$35.

The color can be chosen with more care and may be adapted more easily to the coloring and general personality of the wearer. The home-made garment more often expresses individuality, is more artistic many times, and is less apt to be duplicated. This last means a good deal to the average woman who wishes something different from that worn by her neighbor. Even the best dressmaker may duplicate some of her gowns. Often a customer is led to believe that the dress she is purchasing is an exclusive design, and she may pay a high price for it for this reason. Last summer three women met on the campus of one of New York's great universities, each from a different part of the country. One woman was tall and very stout, one of medium size, and one thin. Each had been sold the dress she had on with the idea that she had the only dress of its kind, and that it was just the thing which was best adapted to her especial type of figure. In reality the dress was suited only to the slender woman. Many times the unscrupulous salesman persuades his customer to buy by telling her that the style of hat or dress is just what she needs to bring out the good points in her figure or to cover up certain defects. Many of the dresses, suits, and coats offered are entirely unsuited to the general needs of the average woman and many of them are ugly besides.

Of course to make clothing successfully one must have some knowledge of garment construction, a feeling for line and color, and some skill of hand. Every woman does not have the required knowledge, but the public schools, normal schools, colleges, and universities give opportunities for training in textiles and clothing. Then there are extension courses, evening classes, short courses, bulletins, newspaper and magazine articles, as well as numerous lectures on dress, besides some helpful books. The woman of average intelligence who is interested in the making of garments may at least get some idea of the selection of materials, of design, and also of the processes of construction. The inexperienced woman might start on simple garments such as aprons, underwear, and children's clothes. After she has gained a little experience and has become more skillful in the use of her needle it will not be difficult for her to make her own dresses. Many say, "But why trouble to make clothes, as it is not possible to get the cut and style which is found in the ready-made garment." We must admit that in the average dress which is made in the home there is a lack of distinction in cut but this is unnecessary. There is no reason why such a dress should have a "homemade" appearance. It is possible to make a garment in the home which has the style of the gown made by the professional. It may even surpass it in cut. If the person who makes her own clothes has some artistic sense, a feeling for clothes, a knowledge of what is good in dress from the standpoint of art, is conscious of her good and her weak points, knows how to emphasize the good and to cover up the bad, it is not difficult to make a garment which is far more artistic than any she could buy for a moderate price. It may even be as chic as those shown in the best shops. The woman of artistic taste often is able to add little individual touches which are the making of a garment. The woman who can make for herself a few artistic dresses of distinctive cut, which may be used until they are worn out because they are simple and look nice, is fortunate indeed.

Great care must be used in the choice of materials when a garment is to be made at home. In order that it may be suited to its use, not only is it necessary to know for what it is to be used but also the style of garment which is to be made, so that the exact quantity of material may be computed. Guessing at the quantity shows poor judgment. It is always wasteful to buy too much and even worse to buy too little, since it is sometimes impossible to match a piece of material. Many people plan to have some left for the time when the garment is to be made over.

This is usually not worth while and does not tend to thrift in clothing, as a garment often changes color or wears in such a way as to make it impossible to use the new material. The quality of the material is important. A poor fabric does not wear, never looks well, and is more apt to change color and change its shape. It is better to economize on the number of dresses rather than on the quality of their material. In choosing color, consider the hair, eyes, complexion, personality, age, and build of the wearer, and the occasion for which the dress is intended as well as the fastness of the color. In considering durability, buy material which is firm. The weave also affects the wearing quality. For example: plain weave and twill weave wear better than satin, basket, and figure weaves, because these last have many loose threads that may catch on things and pull and in this way be easily spoiled. Be able to recognize fibers and adulterations. Know what you are buying.

The amount of time one has, the value of that time, and the amount of money one can afford to spend for clothing are factors which determine whether or not garments are to be bought or made at home. Often it is far more sensible to buy garments ready-made than to make them. Many women have their time fully taken by work which means more to them and to the world than making their own clothes could possibly mean. Many business women work hard every day and have no time for sewing except at night. They are too tired when evening comes to bother with making clothes, and sometimes they are not the people who sew with ease. If such women are making a fair salary they had far better get some training in wise selection and buy their clothing. Mothers sometimes find that they must choose between doing their own sewing and being companions to their children. Again there are women who have some leisure but have a strong dislike for sewing, who do not do it well or easily, yet cannot afford to hire everything made or to buy high priced ready-made garments. It is better for them if possible to do some kind of work which they do like and can do well and use the money toward buying their clothes. If one must hire one's sewing done, there is no great saving in cost over buying ready-made, but one gets better materials and better made garments, yet often they are lacking in style. The average dress-maker or sewing woman does not have the time to study line, color, individuality, and fashion sufficiently to turn out always a stylish, artistic, garment. Then, besides, she is not paid enough for her work to justify her in spending the time necessary to get such results. Each woman must decide for herself whether she is willing to sacrifice cost

for material, workmanship, and individuality, or vice versa. Again the woman who is clever with her needle, if she has a little leisure, may give the ready-made dress or other garment certain individual touches, which may change it entirely and in a way adapt it to her personality and individuality.

If clothing is to be bought ready-made the use of the garment must be considered and the occasion for which it is intended. Decide what you can afford to pay for it and try to get the full value of the money you have put into it. Remember that well-made, high-class garments of good material are not cheap. One must expect to pay a good price for quality, but the cost of the garment in relation to the clothing budget as a whole must also be considered.

Buy clothing which has been made under right conditions. The woman who is interested in bettering the condition of her fellow workers, who has a sympathy for society as a whole and an interest in it, is not going to wear the garment which has been made at the expense of the health and character of other women. She will not encourage sweated labor, unsanitary conditions, long hours, and underpaid labor by buying garments which have been made under those conditions.

Buy high-class garments, if possible,—garments of good material, style, and workmanship. By all means consider comfort and beauty. Have a few simple, well chosen clothes, and stick to lines and colors which are most becoming. Lack of art and individuality in dress is one reason why so many tire of their clothes and are willing and anxious to cast them aside for new ones. Distinction of style and perfection of cut determine to a great extent the success of a garment.

EDITORIAL

Colorado and the American Home Economics Association. The Centennial State, Colorado, can best express her welcome to the members of the American Home Economics Association through the opportunities for recreation, for rest, and for sightseeing, with which she has been so richly endowed. Colorado Springs, with her mile-high elevation, her days of sunshine and nights of cool refreshment, offers exceptional comfort and convenience for Association meetings.

Pike's Peak, the famous old sentinel of the Rockies, with its cog road and its broad auto toll road; the "Garden of the Gods," a district of unique rock formation; these, and numerous other attractions are in the immediate vicinity of the convention town.

Colorado contains within her boundaries two famous national play grounds, the Rocky Mountain National Park (Estes Park) and the Mesa Verde National Park.

A half day's ride to the north of the Springs brings the Colorado visitor to the Rocky Mountain National Park. Access to this wonderful mountain resort, nestling on "the top of the world," is possible only by means of automobile highways, the most spectacular of which follows the Big Thompson river in its winding course through rugged, rock-walled cañons. Adventure, the thrill of a hundred-mile view at sunrise, the breath taking ecstasy of a glance backward to one's starting point miles below, or just plain, lazy, old-fashioned fun, fishing or riding horseback, are all within reach of the sojourner in Estes Park. It has been repeatedly said that the peaks and ranges of the park offer every incentive, every thrill, and every satisfaction to the mountain climber that may be found in the Alps of Switzerland. One of the most popular climbs, requiring hardihood both of body and of nerve, is the ascent of Long's Peak, towering 14,271 feet above sea level—higher even than the famous Pike's Peak.

The Mesa Verde National Park is in the southwestern part of the state and contains what is considered the most notable and best preserved of the prehistoric cliff-dwellings. These ancient dwellings, clinging to the walls of overhanging cliffs, for all the world like swallow's

nests, are constructed of a masonry which has stood, with surprising resistance, the assaults of time, of weather, and of unknown battles. Finger prints of the toilers of centuries ago are still visible in the mortar.

These are a few of the things to see and "do" in Colorado. Besides these there are many, many other attractions such as the Denver Park Mountains, so extensive that they require a day by auto to cover. Almost every town within the state, especially along the foothills, has some scenic attraction to offer, reached invariably by smooth auto roads.

Nor should it be forgotten that Colorado Springs is on the way westward to Yellowstone National Park, and to Glacier Park.

Conference on Group Living. The invitation to a Conference on Group Living to be held at the Lake Placid Club May 27 to 31, already noted in the JOURNAL, has been extended by Mrs. Dewey to members of the American Dietetic Association, to the Conference of Deans of Women, the Institution Section of the American Home Economics Association, economic secretaries of the Y. W. C. A, superintendents of hospitals, faculties of colleges giving instruction in institution management, and others. This is not an official meeting, but affords an opportunity for those especially interested in the problems that arise in group living to have several days conference. Its chief purpose is to unify results, to broaden the scope of future research, and avoid duplication of work.

The program is arranged under six headings: Diet and food service; Buying; Training; Housing, Research; Personnel. Some of the topics are: Community Kitchen experiments; Coöperative agencies; Investigation of opportunities and training in technical fields; Floor plans for large group living; Hotel for women; Purchasing of meats; Buying of fruits and canned goods; Cost studies; Diet studies—National Council of Research; Recent labor studies. Round table conferences will be held on school lunches, eight hour service in households, and other topics. The list of speakers includes Dr. McCollum, Miss Arnold, Dr. Meeker of the Department of Labor, Dr. Cole of Harvard, Miss Geary of the Y. W. C. A., the president and secretary of the American Dietetic Association, and others equally well known to the home economics world, besides several experts from other fields.

The Lake Placid Club, as in former years, has extended the courtesy of half rates to the members of the conference. Motor and launch trips, walks and climbs, rowing, tennis and golf will add the charm of delightful recreation to the inspiration of the meetings.

Meeting of the American Home Economics Association in connection with the Department of Superintendence, N. E. A. At the meeting of the A. H. E. A. held in Cleveland, February 23 and 24, 1920, there was an attendance of between two hundred and three hundred at each session.

At the Council meeting held on Monday afternoon, Edna N. White, the president, presiding, there was an attendance of 18. New members of the Executive Committee were appointed as follows: Mildred Weigley, Alice F. Blood, Ava Milam, Alice M. Loomis, Mary E. Matthews.

Plans were discussed concerning the meeting to be held in Colorado Springs, Colorado, June 24-29, 1920. One of the most interesting topics for action was the proposed plan to establish at Constantinople College for Women a chair of Home Economics to be supported by the Association. The following committee was appointed to raise money for the fund to make the professorship possible: Abby Marlatt, Chairman; Isabel Ely Lord, Eastern states; Agnes Ellen Harris, Southern states; Isabel Bevier, Central states; Alice M. Loomis, West Central states; Ava B. Milam, Pacific states.

An unusually interesting program had been prepared for the meeting by the Program Committee, Abby Marlatt chairman. On Monday afternoon the main topic was Methods in High Schools. Helen Goodspeed, State Supervisor of Home Economics, Madison, Wisconsin, outlined a scheme for developing the problem solving method in home economics teaching. She offered specific suggestions for linking the present life of the girl with her work in home economics in the school. Rosa Biery, University of Chicago, Elementary and High Schools, presented a paper on Applied Economics in a One Year Home Economics High School Course. Miss Biery has worked out a very excellent scheme, and one with many possibilities for development. The general discussion of these two papers showed a keen interest in the topic.

At this meeting Miriam Birdseye, States Relations Service, Washington, D. C., presented a report of the work of the Textile Committee which is undertaking to promote standardization of textile fabrics, and promises to accomplish results along this much needed line.

Edna N. White, Director of the Merrill-Palmer School, Detroit, Michigan, was leader of the discussion.

The subject for Tuesday morning was Tests in Home Economics Teaching, Adelaide Laura Van Duzen, Supervisor of Home Economics, Cleveland, Ohio, presiding. Mabel Trilling presented the topic Stand-

ard Tests in Teaching Textiles and Clothing. The reports of this work, both in Cleveland, and in Blue Ridge, June, 1919, have been most interesting and valuable. Florence Williams, Supervisor of Industrial Arts, Richmond, Indiana, followed Miss Trilling and told how tests are an aid in the teaching and organization of home economics. Betsey Madison, Home Economics Department, University of Wisconsin, Madison, presented a paper on Teaching by the Meal Plan Method. After a lively discussion, Mrs. Mary Schenck Woolman spoke briefly upon the subject of the moving picture as an aid in the teaching of home economics.

On Tuesday afternoon, Lydia Roberts, Assistant Professor of Home Economics, University of Chicago, was leader. The general topic of the meeting was Child Feeding. Miss Roberts gave a very definite and concrete report on the field work which she has been doing for the Children's Bureau that carried with it confidence in the results to be gained through work along the lines of child welfare. Mary A. Harper, Association for Improving the Condition of the Poor, New York City, followed Miss Roberts and told of the work of a Feeding Clinic and Demonstration School. It is interesting to note that in work of this type the results are tangible and one is inspired to bend all efforts in every direction possible toward improvement in health through wise feeding. A very interesting exhibit of rats on different experimental diets was shown by Emma Francis, Battle Creek Sanitarium, Battle Creek, Michigan, with details in relation to the various experiments. Miss Francis made the very generous offer to supply those who request them with photographs of rats fed on different diets. Furthermore, she offered to send to anyone who wished them live rats for purposes of experimenting.

A home economics dinner was arranged by the local committee for Monday night, at which several prominent residents of Cleveland spoke. Visits had also been arranged to elementary and junior and senior high schools, to the Western Reserve University, to the Y. W. C. A., to factories serving lunches, and to hospitals.

Great appreciation was expressed for the work of the local committee which made the visit to Cleveland a most delightful one for all members of the Association.

CORA M. WINCHELL,
Secretary, American Home Economics Association.

Is the Calcium of Vegetables of Value? Since Sherman and Gillett showed convincingly that calcium is the food constituent which is most apt to be lacking in the diet of many people, nutrition workers have been concerned as to possible sources of it. Milk is well known to furnish the chief supply. Is this the only food which can give it satisfactorily? Is that supplied by vegetables of equal value?

In 1918 McClugage and Mendel,¹ published the results of experiments on feeding various forms of calcium to two dogs. They used milk, calcium carbonate, spinach, and carrots. The quantities of calcium fed were in no case sufficient to prevent loss of some calcium from the animals' bodies. The calcium from vegetables was much less completely utilized than from the other sources. From milk on the average only 27 per cent of that fed was lost, from calcium carbonate 35 per cent, and from the spinach and the carrots the large amount of 80 per cent. The experiments bring out clearly that, for the dogs, milk and the inorganic salt had a greater value as a source of this element than had the vegetables used.

More recently Mrs. Mary Swartz Rose² has published two series of experiments on the utilization of calcium by healthy young women, which give results quite different from those of the Yale investigators. All of the diets contained approximately the minimum amount of calcium on which calcium equilibrium can be maintained. In the first three weeks 70 per cent of the element came from milk and in the second two weeks milk was almost completely omitted and carrots substituted as the source of calcium. The calcium in this second period was as well utilized as in the first. It seems therefore possible for adults to obtain the required calcium largely from carrots.

¹ McClugage, H. B. and Mendel, L. B., Experiments on the Utilization of Nitrogen, Calcium, and Magnesium in Diets Containing Carrots and Spinach. *Jour. Biol. Chem.*, 35, 353, 1918.

² Rose, Mary Swartz, Experiments on the Utilization of the Calcium of Carrots by Man. *Jour. Biol. Chem.*, 41, 349, 1920.

NEWS FROM THE FIELD

Gift to the National Academy of Sciences and the National Research Council. The Carnegie Corporation of New York has given \$5,000,000 to the National Academy of Sciences and the National Research Council. Part will be used to erect in Washington a home of "suitable architectural dignity" for the two organizations, and the remainder will be a permanent endowment for the National Research Council. "The council is a democratic organization based upon some forty of the great scientific and engineering societies of the country, which elect delegates to its constituent divisions. It is not supported or controlled by the government, differing in this respect from other similar organizations established, since the beginning of the war, in England, Italy, Japan, Canada, and Australia. . . . The council was organized in 1916 as a measure of national preparedness and its efforts during the war were mostly confined to assisting the government in the solution of pressing war-time problems involving scientific investigation. Reorganized since the war on a peace-time footing, it is now attempting to stimulate and promote scientific research in agriculture, medicine, and industry, and in every field of pure science."

This is a matter of great interest to home economics workers as well as to others interested in scientific progress and its application to life. As an instance may be cited the work of the Division of Biology and Agriculture, of which C. E. McClung is chairman. One of the committees of this division deals with "Food and Nutrition." Prof. J. R. Murlin is chairman. The committee has three standing sub-committees, namely: (a) Animal nutrition; (b) Human nutrition; (c) Protein metabolism in animal feeding.

A New Home Economics Club. The young women of the Home Economics Department of the State Manual Training Normal at Pittsburg, Kansas, have formed a Home Economics Club during the last semester. Officers for the year have been elected and the regular monthly business meetings have been marked by a good attendance and instructive and entertaining programs.

The object of this club is three-fold and the young women who make up the membership have as their aim the gaining of knowledge and skill in the science and art of home-making; a realization of the importance of the home, its duties and relation to society; and the development of poise, dignity, and other qualities which bespeak true womanhood. Through the accomplishment of these ends it is expected that the department will be strengthened and the course enriched and broadened.

The Pittsburg Normal is a very young institution but a well balanced four-year course in Home Economics is offered and the general tone of the institution is peculiarly in keeping with the development of alert, sympathetic, accomplished teachers and workers in the broader field of home-making.

A Health Campaign. The Department of Household Arts Education of Teachers College, Columbia University, is conducting a health campaign among the students of the department and others who have wished to enter it.

The departments of Nutrition and Physical Education are giving their hearty cooperation to the movement.

Records and weight charts are being kept and attention is given to individual cases needing advice.

The students are not only aiming to make themselves physically fit, but are learning how to organize and conduct a health campaign.

Of 131 students registered in this campaign, 22.1 per cent are 10 per cent or more below normal weight and 16.8 per cent are 10 per cent or more above normal.

A series of mass meetings has been arranged by the student committee for the members of the department. Various phases of the health problem will be presented by specialists in the field.

Each class participating in the contest appointed a committee of two students from its own membership to assist the general committee in the execution of the plans for the campaign.

Angeline Wood, Frances Zuill and Elizabeth Marsh are the members of the student committee in charge of the campaign. A staff committee of five members act as an advisory board. The members of this committee are Dr. Mary Swartz Rose, Dr. Thomas D. Wood, Wilhemina H. Spohr, Josephine A. Marshall, and Cora M. Winchell.

State Teachers Association in Columbia, South Carolina. At a recent meeting Dr. Benjamin Andrews of the Savings Division, U. S. Treasury Department, Washington, spoke to the members of the Home Economics Association in the afternoon and was on the general program for the evening. He spoke in an impressive way of the problems we are facing today, not only those of food and clothing, but of all living conditions. He told of the work some states are doing and urged the appointment of a program committee on thrift. The association felt especially favored in having him present.

Notes. A course of lectures on lunch-room management is being given in New York University by Miss Elizabeth H. Bohn. Some of the topics are: benefits of company lunch rooms; food requirements and standards; accounting; equipment.

The New York Association of Dietitians is making a survey in hospitals, throughout

the state, of the courses in dietetics given nurses, the training offered to pupil dietitians, and the duties of the dietitians in the various hospitals.

National Education Association. The next annual meeting will be held at Salt Lake City, Utah, July 4-10, inclusive.

A feature of the program will be the Congress of Boards of Education on Thursday, July 8—forenoon, afternoon, and evening. Theme: "Financing and Managing the Public Schools." Members of school boards, state, city, and county superintendents, and educational experts will take part in the discussions.

The program of the Department of Home Economics for the General Federation Meeting in Des Moines, June 16-23, includes two conferences—one on Child Welfare as a Home Economics Problem in the Home of the Average Club Woman and the other A Home Economics and a Made in America program. The latter will include a presentation of the Dye Situation, the Textile Situation, and Federal Control of Food.

OUR CONTRIBUTORS

From time to time the JOURNAL is favored by contributions from those who are not well known to all our readers. Such contributors may have newly come into home economics work, they may only lately have entered the literary field, or they may have made their reputation in other lines of work. Of the last class is George S. Bryan, the author of "Notes on Early New England Eating." Mr. Bryan is a member of the American Historical Association, was formerly on the editorial staff of the Encyclopedia Americana and other important publications, is the author of several books, and is a frequent contributor to well known newspapers.

Marguerite Davis was associated with Dr. McCollum in his work at the University of Wisconsin. Her co-authors are at present students in that university.

It will interest many to know that Alice F. Mendel, the author of "Alimentary Hygiene and Rational Alimentation in the Year 3000," in our last number, is the wife of Dr. LaFayette B. Mendel of Yale University.

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EDUCATIONAL RESEARCH IN THE PRACTICAL ARTS¹

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In the practical arts, as in other subjects, there are two distinct although closely related forms of research work. One of these is that form of investigation by which new truth is discovered, research by which the sum of knowledge is increased. This type of research is not primarily concerned with the immediate uses which can be made of what is discovered. To be sure, there is usually the presumption that whatever is found will be of some value in relationship to life. But in such research the worker goes forward to the end of his quest with an immediate interest in the truth as it reveals itself, whatever may be its value.

The other form of research has to do with the discovery of relationships between life needs and means for meeting these needs, and with the selection and adaptation of known materials to satisfy these needs. It is the function of this form of investigation to select from the contributions of the first type those elements and results which are of service to life and to make these available for the education of the masses. This kind of research we may call professional or educational as distinguished from that which is commonly known as academic. In an institution which has large numbers of advanced students directly interested in some form of educational leadership provision should be made for both forms of research. My purpose here, however, is to consider educational research alone.

¹ Summary of an address given at the Alumni Conference of Teachers College, February 20, 1920.

We may treat the matter from two points of view: first, that of research as a method of education, and, second, that of the practical values resulting from such research.

One of the largest purposes of education is to develop the inquiring attitude of mind. Research provides means for this and stimulates growth in the student. This method of study focuses the mind upon a problem the solution of which requires the actual use of the scientific method. It requires the setting up of a definite aim, planning the procedure in carrying forward the work to realize this aim, executing the plan in its details, and judging or testing results throughout the procedure until the final realization of the aim is accomplished. It requires the application of much from several sources, and tests one's knowledge of principles and his capacity to apply them. It reveals any inadequacies of exact knowledge or methods of work and provides a compelling motive for removing any deficiencies by selective and intensive study.

Such work prevents the development of a dogmatic or self-sufficient attitude and contributes directly in making for genuinely scientific open-mindedness. This attitude of inquiry and open-mindedness is most essential in good teaching or supervisory work. It is the only attitude by which work can be kept from becoming formal and mechanical. Research is the only method which will most helpfully stimulate inquiry and growth in the mind of the student. It develops the exploratory impulse and stimulates creative activity, providing a means for both its expression and its satisfaction.

Research of this kind by the advanced student is a direct preparation under guidance for the kinds of organization and use of materials required in positions in a field developing as rapidly as are all of the practical arts. Fortunately, the practical arts subjects have not become very extensively formalized. New materials are added from the results of researches by specialists with great frequency, and constant readjustments in teaching and in the organization of work are necessary. The training in method which this kind of research affords is important and valuable in both teaching and supervisory positions, whether in schools or in institutions which strive to make the most effective applications of whatever is discovered in the fields of related technical research.

As a general method of teaching and learning, this form of research may begin very early in the schools and progress with increasingly com-

plex and difficult problems as we advance from elementary education to college and university stages. It is the project method of instruction in a somewhat special form. In the graduate school, the projects, to be of most value, should include elements of adaptation and relationship which are new, which are unknown to anyone. This is the justification of the term research for the work as applied to the projects appropriate to challenge the endeavors of advanced students. These new elements which are found are not something which will add to the sum of technical knowledge within a given field, but they will add to our knowledge of relationships and to means of using more effectively that which makes up some part of the technical field. In the periods of elementary, secondary, and early college education the projects are the means by which the known facts, principles, and technique of the special fields are acquired. In advanced educational research the projects are the means for adapting these bodies of knowledge and technique to teaching or other practical applications by developing new or more effective methods of their organization and usage.

Practically considered, such workers make the contributions of specialists available for the masses. Taken altogether, there is an immense amount of material in the fields of household, industrial, and fine arts of very great importance to the well-being of all, but in such a technical form that it can not be used. There are literally hundreds of problems in the adaptation and formulation of such material in simple, practical applications to the needs of everyday life.

To do this work, thorough scholarship in the given technical field is necessary. But coupled with this scholarship there is also required a thorough knowledge of educational principles and a sense of the needs of the masses. If in those who have some measure of the passion for scholarship we may also develop as great a passion for service we shall have the type of worker who can contribute richly by this form of educational research.

All we can hope to do in this limited time is to indicate the meaning of the kind of research of which we are thinking by several illustrations which suggest the variety of possible problems. In general, these illustrations center about a few general types of problems. These are: the organization of curricula; the adaptation of technical materials to school usage and popular usage; the development of special methods of teaching; the working out of problems in equipment for definite purposes; the organization of relationships between technical subject

matter and other fields or subjects; and the adaptation of teaching materials and methods in regular schools to special types of schools—part-time, evening, or other forms.

To illustrate possibilities, the following problems are offered as suggestive:

The use of excursions in the study of foods and clothing in elementary and high schools.

The use of museum materials and pictures in teaching the household arts.

The organization of household arts courses for junior high schools.

How to carry the influence of school instruction in the practical arts into the homes of the students.

The organization in content and method for short courses in household arts for housewives in country or city.

The practical arithmetic of foods—purchasing, preparing, and using.

The practical arithmetic of clothing and of furnishings.

Practical problems in design as related to studies in house furnishings, for upper grades and high schools.

Finding out, by specific evidence, who gets the most bargains in half a dozen bargain sales.

Considering the whole problem, economically, hygienically, and aesthetically, does it pay the housewife to bake her own bread? If she bakes her own bread, how does she get her pay?

An annual or semi-annual digest with careful evaluations of government documents—federal, state, and municipal—on household arts subjects.

The organization of definite projects, with all of the necessary material, on cleansing agencies, laundering, marketing, labor saving devices, and kindred topics, for use in elementary schools, or high schools, or evening schools.

History studies adapted to the elementary schools on such topics as hats, shoes, neckwear, gloves, coats, and others which these suggest.

Industrial and commercial geography of certain specific foods, of textiles, of household china, of rugs, and of other household materials.

The organization of informational material for vocational guidance purposes in the household arts and related fields.

The possibilities of household arts pursuits for the avocational occupation of women in the professions.

Problems and methods in supervising teachers of the practical arts.

The preparation of a score card for various phases of housekeeping.

Experimentation in using the mothers of girls as assistants in teaching these girls the practical arts subjects.

How exhibits of school work in the practical arts may be made a means of education in the studies themselves.

A study of school equipment essential for teaching the several phases of practical arts in the best way.

A study of the amount and distribution of the spare time of 100 housewives with the plans of household routine followed by each, with deductions for principles of household management.

The actual foods in variety and amount eaten by 100 seventh grade children in one week and the questions in dietetics and hygiene raised by the information gained.

The clothing purchased and worn by 100 girls of the eighth grade for one year, and the deductions for studies in girls' clothing and budget problems.

The development of standardized types of kitchens as to size and equipment in houses of various types together with an organization of this material for teaching purposes.

A study of the actual kinds and amounts of hand sewing done in several hundred homes as a basis for the selection of projects in hand sewing for a course in vocational homemaking.

A study in food purchasing through the observation of a thousand individual illustrations of purchasing, and the making of a course for teaching the elements of marketing for which the investigation reveals needs.

By close coöperation between the technical departments and the general departments of schools of education, it should be possible to direct the work of advanced students in many such problems with the hope of substantial results. Needs for such work are widespread and intense. Our institution realizes the call and it recognizes its obligation. To this call it now plans to respond with definite provision for conducting educational research studies in practical arts and making their results available.

FOOD WORK IN THE SINGLE PERIOD

STELLA M. HUBBELL

Englewood High School, Chicago

We began single period food work in the autumn of 1918 when there was special need for food conservation as a war measure. Our principal, Mr. James E. Armstrong, felt that it should be possible for every girl in high school to take the work, if she wished to do so.

The classes were therefore all organized for one school period a day, each class having an enrollment of 32 to 35. The task seemed at first almost an impossible one, as the time allowed for actual work was not more than forty minutes. It was at once seen that for each girl in so large a class to measure materials, prepare dishes, cook and serve them, and leave utensils, tables, and towels in proper condition would result only in failure. The first lessons were therefore given as demonstrations by the teacher, but the girls were all anxious to work and this plan was abandoned. The next step was to have certain groups alternate in demonstrating the lesson under the teacher's direction. This plan was soon discarded, as it left too many in the unemployed class. The work finally evolved itself in this manner. The classes were all divided into groups of four or five, called families. One girl was either elected or appointed to act as manager of the group. It was her duty to see that work was fairly distributed in her family and that the same kind of task was not done twice in succession by the same girls. She saw to it that they left tables and drawers in proper order and that towels and dish cloths were cared for.

During the recitation period on the day preceding the laboratory work the lesson for the next day was very carefully discussed. The recipes were all for family amounts and the girls thus had practical and valuable experience in preparing dishes such as would be used at the home table. The grocery bills were no larger than when the individual recipes using such amounts as a tablespoon of sugar and a teaspoon of egg were used.

The girls learned to handle larger quantities of materials and to be more careful in the work, as they understood that any inaccuracy would entail a larger loss and would also bring down upon themselves the reproaches of the rest of the group, who were expecting to enjoy the fruits of their labor. They came into class with eagerness and prompt-

ness as they knew time was limited and must be improved to the utmost, if their product was to be finished. There was no dawdling over work and no waste of time in washing unnecessary dishes. They learned to save dishes as well as time, to keep dishes washed as they used them, and to sit down to eat with all dishes washed and put away, except the ones used for serving.

They learned coöperation with others, a lesson that is worth much. They did good team work in order to get through. During the year and a half in which we had only one period for all our food work, there were not more than two complaints about lack of harmony in any groups. These slight differences were easily adjusted. The girls grouped themselves as they liked and thus formed congenial "families."

Each semester the girls who have had one year's previous training in the high school specialize on menu making and meal serving. There is always one class doing this work, usually serving a meal once a week. On the other laboratory day, if they are not getting ready for a luncheon the next day, they prepare some new dish which they will again make as a part of some subsequent luncheon or meal. In addition to this class, the girls who are taking the second semester of the first year also do some meal work, as many of them cannot take work the second year.

During a part of the time there were two or three student helpers, who gave three hours a week to assisting in the laboratory. They received for this extra credit and were of much service in placing supplies for the laboratory work, and doing similar tasks. With the classes serving luncheons the menus were discussed, as to their food value, cost, and suitability to one hour work, at a previous recitation. Preliminary work was done the day before the luncheon, and as far as possible such things as cookies, cake, salad dressing, were made and put away for the next day.

The hour preceding a luncheon the student helper, or member of the class, placed all supplies in readiness, filled tea-kettles with water to heat, and saw to it that everything was arranged for the greatest efficiency when the class came in. The classes which were doing most of the meal work were always placed at the hour preceding the noon intermission. They thus had their meal at the proper hour, and if any were a little more elaborate than usual a few minutes might be used from the luncheon period for washing extra dishes or doing some last things. The fireless cooker was used frequently, some members of the class coming in before school in the morning and placing food in the

cooker. The girls learned the value of planning ahead even the small details, and thus saw the failure and inefficiency of last minute ordering and lack of forethought.

The following were two of the menus which were served:

Salmon and celery salad, mashed potatoes, baking powder biscuit and butter, jelly, canned pears and cookies.

Beef loaf, boiled potatoes and brown gravy, cabbage salad, tea biscuit and butter, canned peaches and loaf cake.

The jelly and canned fruit were put up by the girls last autumn. The beef loaf mixture was prepared by two of the student helpers and made into small loaves, one for each family, and was ready for the oven when the class came in. Such a dish as this was sometimes prepared by some member of a preceding class, and others were able to observe the work in addition to their own regular lesson.

The cost of this menu was 17 cents for each girl. They usually served themselves, but at this luncheon three guests were served in addition. For each of these meals they were allowed ten minutes of extra time from the noon intermission, to wash the last dishes.

In the limited time allowed they learned to turn off work and accomplish certain things in a set time. The luncheons or meals were always discussed afterward. Criticisms were made by members of groups and certain improvements suggested in planning for next time.

The one hour period demands much careful thought and planning by the teacher and there must be a sympathetic and helpful spirit to bring out the coöperation of the class so that they will be eager to respond.

¶ The longer periods are easier, as there is not the constant thought of time to make one anxious and there are many things which can not be done in the one hour, but, with good organization, careful planning, and responsiveness on the part of the class, a great deal may be accomplished in the one hour period.

A COMPARATIVE STUDY OF HOME ECONOMICS COURSES IN COLLEGES

JEAN KRUEGER

University of Wisconsin

This year, the curriculum committee of the home economics department of the University of Wisconsin was requested to measure its own department with that of other institutions. Because of the shortness of the time allotted it was necessary to limit the comparison to a few schools representative of different sections of the country. For the same reason, information had to be secured from correspondence and from the latest catalogues obtainable, instead of from personal visits and conferences which, of course, would have been much more satisfactory. The accompanying charts were compiled from the data secured. Even taking into consideration all the possibilities of error due to such a method of study, certain tendencies are apparent.

The committee wished to find out, among other things, what the uniformity of curricula in various departments of accepted college standing might be. In order to reach a basis of comparison, material was first classified according to types of schools, and then according to majors. The general, food, textile, and vocational education majors were selected as those which are offered by most departments. The courses outlined in the catalogues for these majors were assorted according to their nature. For instance, requirements in English, in language, in history, in art, were classified as "general;" requirements in chemistry, in physics, in bacteriology, as "science;" and the work in food, in clothing, in shelter, in child care, as "home economics." By calculating the credit value of each division, and translating these into percentages of the total number of credits required for graduation, the following percentages are made directly comparable:

1. Percentage of time given to general, science, and home economics subjects.
2. Percentage of time given to electives.
3. Proportion of non-technical to technical subjects.
4. Proportion of required subjects to electives.

As can readily be seen, it is a difficult matter to draw definite conclusions from the accompanying charts. With such a wide variance of requirements existing among the different colleges and majors, very

little emphasis may be placed on the averages shown by the dotted lines. They merely indicate a tendency.

A few generalities are possible. The state agricultural schools, for instance, appear to require more non-technical work in the food and textile majors than do the universities and endowed schools studied. They also require a larger percentage of general subject matter in the general major than the average for that division. This emphasis is accomplished at the expense of electives and, in the case of the general major, science is curtailed. In the vocational education major, more science than the average is required, slightly less general work, and fewer electives.

In the universities, as a rule, a larger proportion of time is allowed for electives. These institutions require more science in the food major than the average indicated and in all majors, less time in home economics subjects. The reverse of this condition is true in the endowed schools, where the percentage of time given home economics is high, and that given electives and general subject matter is low.

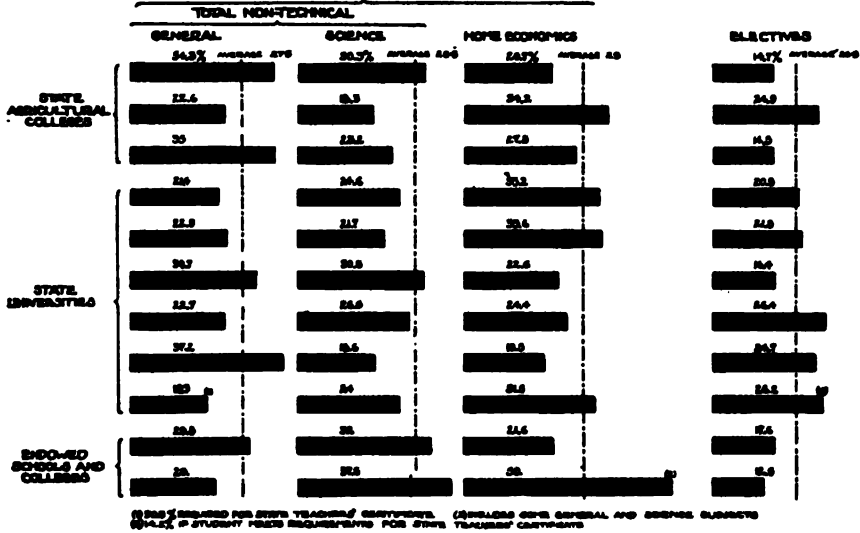
The outstanding feature of the accompanying charts is that each school seems to be a law unto itself. It is of interest to note, however, that in the food major—perhaps the most carefully organized major of all—the averages for each division approach 25 per cent of the whole. That is, one fourth of the credits required for graduation must represent languages, English, economics; one fourth, science; one fourth, home economics; and one fourth, electives. Is this the very best division of time? If so, should it be the same for all majors?

While there is no need for home economics courses everywhere to be identical, there is a definite need for greater uniformity than at present exists. This holds true in the context of basic home economics courses, as well as in the larger divisions of subject matter. Those who have had the responsibility of accrediting the home economics work done by a student in another institution realize the difficulties involved. Ten units of general chemistry from an accredited college are accepted without question, while five credits in a home economics subject may or may not fulfill the requirements of the department to which they are submitted.

The difficulties of a transferring student are not, however, the vital issue. Home economics leaders, up to the present, have been concerned in proving the value of the work as an integral part in the higher education of women. Would not greater uniformity in requirements and context of courses all over the country strengthen still more what has already been accomplished?

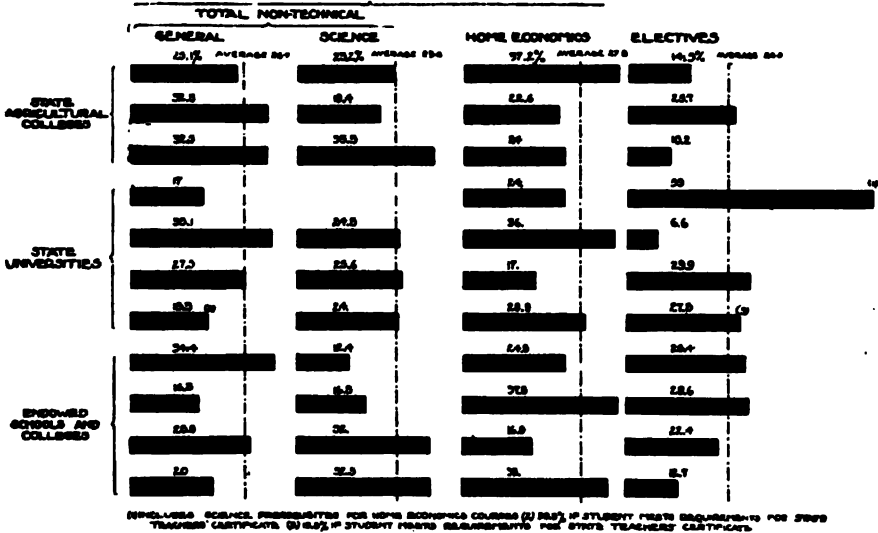
GENERAL MAJOR

TOTAL REQUIRED



FOOD MAJOR

TOTAL REQUIRED



THE HYGIENE OF CLOTHING

ZELLA E. BIGELOW

Special Assistant in Home Economics Education, Federal Board for Vocational Education

From the designer to the ultimate consumer everyone who deals with a garment will agree that certain essential things must be considered in its selection. It must be suitable, durable, hygienic, and becoming. The teacher who deals with the subject of clothing is confronted with the problem of so presenting these factors that the consumer is trained to recognize and apply them in clothing herself and her family.

The success of the instruction in suitability of clothing is measured by the extent to which good judgment and good taste are created and developed in the pupil. The responsibility of imparting to the student an appreciation of becomingness rests jointly with the teachers of drawing, design, and clothing construction. These three subjects deal with line, color, and proportion, the determining factors in an artistic and becoming garment.

The hygiene of clothing is a subject which belongs to the teacher of physiology and hygiene, to the physical director, and to the teacher of textiles and clothing. It seems fair to say that in many clothing courses, with their emphasis on the construction of clothing, the hygienic phase has been neglected. Now that ready-made clothing is more and more meeting the needs of women and replacing garments made at home or by a dressmaker, the selection of clothing, as well as its construction, is being included in clothing courses, and in these new courses hygiene must be given the place and time due to its importance.

The four most important factors which determine the hygienic value of a garment are: first, the inherent properties of the fiber itself; second, the properties of the woven material as affected by its composition, weight, weave, finish, and color; third, the properties of the garment as affected by its construction; and, fourth, those factors which depend upon the wearer—upon the age, occupation, and environment.

PROPERTIES OF FIBERS

From the standpoint of clothing, the following properties of textile fibers are important for the reasons given:

Absorption. Clothing worn next the body must take care of the secretions of the sweat glands and the sebaceous glands.

Evaporation. The moisture absorbed by garments worn next the skin should not be retained but should be eliminated nearly as fast as it is formed. Moisture retained in a garment makes it feel cold and damp and forms a heat conducting layer which may carry heat from the body, thus causing a dangerous lowering of temperature. On the other hand too rapid evaporation may also cause a chill.

Heat conductivity. One function of clothing is to help maintain the body at a constant temperature. It should not conduct heat too rapidly away from the body, nor hinder too much the radiation of body heat.

Elasticity. This is important for comfort and health. Freedom of motion must be permitted.

Tensile strength. The fineness to which a fiber can be spun depends partly upon its tensile strength. Durability in relation to the weight and fineness of material therefore depends upon this property.

Weight. Heavy clothing impedes free movement of the body, and is a burden. The weight is often caused by material which is so close and boardlike in texture as to be unhygienic from other standpoints as well.

Cleanliness. The health of the wearer and the care of the garment are affected by the cleanliness of the fiber. Clothing should be capable of easy and thorough cleansing. There is one species of louse, *Pediculus vestimenti*, which lives on the human body and breeds in soiled clothing.

Affinity for dyes is important only in outer clothing, since most clothing worn next the skin is white. For outer clothing, however, this property must be considered in relation to attractiveness, care, cost, and length of wear. Stain removal is a problem which hinges upon the affinity of the fibers for dyes.

Luster is a factor in cleanliness, attractiveness, and becomingness. Lustrous materials are inclined to shed dust because the fibers of which they are made are smooth.

Shrinking or felting. If the air spaces in a material are closed by shrinking or felting, its heat conductivity is changed and its hygienic value is thereby affected. The care of a garment and its laundering are more difficult when it possesses this quality.

Cost of production, manufacture, and transportation is a factor in economy.

The use of the following table is a device by which a comparison of the hygienic value of the four principal fibers may be roughly set forth. The + and - signs are used to indicate the possession of a property to a desirable or undesirable degree, respectively. It must be remembered that this is a comparison of the fibers only, and that these properties may be modified by difference in weaves.

Comparison of properties of fibers

	ABSORPTION	RENDERING	HEAT CONDUCTIVITY	WEIGHT	EVAPORATION	AFFINITY FOR DYES	LUSTER	CLEANLINESS ¹	ELASTICITY	TENSILE STRENGTH	COST
Wool.....	+	-	+	+	+	+	-	-	+	+	-
Silk.....	+	+	+	+	-	+	+	+	+	+	-
Cotton...	-	+	-	-	-	+	-	+	-	+	+
Linen.....	-	+	-	-	-	-	+	+	-	+	-

¹ Cleanliness as listed here has a double significance. Cotton has very few natural impurities; though it collects dirt quickly it is easily laundered. Linen gives up its dirt easily, while wool is difficult to clean. Silk sheds dust, but demands careful handling in cleaning.

A study of the table will show which fibers have the most hygienic properties and therefore might be expected to make the most healthful clothing. Taking two fibers, such as wool and cotton or wool and silk and cancelling the + and - signs will show how the possession and lack of a given property offset each other and render a union of the two fibers very desirable.

PROPERTIES OF MATERIAL

The study of the fibers should be followed by a consideration of the hygienic properties of materials. All other factors being equal, materials made from the four fibers would exactly partake of the properties inherent in the fibers themselves but, since materials differ in composition, weight, weave, finish, and color, it is necessary to study the effects of each of these.

Composition. A combination of fibers in a material is very desirable, not only from the standpoint of health, but of cost as well. Wool and cotton, wool and silk, silk and cotton, and silk and linen are excellent combinations because they combine and offset desirable and undesirable qualities, as is shown by the table.

Weight. The weight of the material should be considered with a view to its use. A motor coat may be quite heavy when the same weight worn for sports or walking would be a burden. Weight also governs the amount of material to be used in a garment. A voluminous skirt of heavy weight material would contribute considerably to fatigue on the part of the wearer. Weight impedes movement and does not necessarily imply warmth.

Weave. The weave must afford ventilation and the correct amount of heat conduction. An open weave with air held in its meshes, is a poor heat conductor. A fiber such as cotton or linen, each of which is a good conductor of heat and allows too rapid evaporation, has these bad qualities offset by an open weave. Silk, which loses moisture rapidly, should be of an open mesh for the same reason when worn next the skin. Too open a mesh allows heat loss by convection. This explains why a sweater is not warm on a windy day and shows how the use of a garment should determine its weave.

Finish. The finish of cloth affects its hygienic properties. A napped cotton material has a disadvantage in its inflammability, but an advantage in the warmth imparted to it by the air enmeshed in the nap. Highly bleached, sized, or weighted fabrics lose some of the most valuable properties of the fibers in the processes they undergo in being converted into cloth. The strength of the fiber, particularly, is impaired, as in the case of bleached linen and weighted silk. A smooth, shiny fabric like silk or linen sheds dust better than does the lusterless wool or cotton.

Waterproofing is one of the valuable finishes from a hygienic standpoint. Waterproof material should be chosen for outside garments used for protection against rain but not for any other purpose, since its very imperviousness becomes a disadvantage. Fireproofing is another finish for materials. While fireproofed materials are not in common use for clothing, they can be procured and have some practical value.

Color. When we think of color in relation to clothes we think of its becomingness, but color has another important, if less obvious, function as regards clothing. It has the power of concentrating, absorbing, or reflecting the sun's rays, thus affecting the temperature of the body. This is of especial importance in hot climates. Some colors are warm while others are cool. White and green afford protection from the sun's rays, while red, orange, and black seem to concentrate them.

Orange is a valuable color for a lining, however, because it cuts off certain light rays which have a harmful effect upon the body. Such a precaution is not necessary in a temperate climate but is of great importance in the tropics. There is another phase of the question of color which is important and which offers a possible danger to guard against. Some dyes are actually poisonous, as is instanced by cases where the wearing of black stockings or dyed shoes has caused infections. Such injurious dyes are more frequently found in cheap articles than in those of better quality.

PROPERTIES OF THE GARMENT

The garment itself is hygienic or unhygienic, depending upon its design and fit.

Design. The weight of the garment should be evenly distributed and should fall on the proper supports, the shoulders. For this purpose the value of the one-piece garment is obvious. There should be no restriction of movement, either at the shoulders, elbows, waist, neck, or ankles. The garment should allow entire freedom of motion and should be so simple that the wearer is unconscious of it.

Fit. The fit of the garment must be neither so tight that it restricts movement, so loose that it is unwieldy, nor so poor that it puts a strain on any part of the body.

Manufacture. There is a factor that pertains to the choice of a ready-made garment, which cannot be ignored by the conscientious consumer—the conditions under which the garment was made. Were they healthful? Did the persons, probably women, who made the garment, labor under conditions that the wearer would be willing to endure? The purchaser should be acquainted with these conditions in order to protect the health and comfort of the great numbers of women workers on ready-to-wear clothing.

THE WEARER

The fourth consideration in the selection of clothing, keeping in mind its hygienic value, is the wearer. Age, health, occupation, and environment must control the choice of garments.

Age and health. Young children have a larger body surface in proportion to their weight than adults, and consequently a greater loss of

heat. They are more active than most adults, and create more heat by exercise. Older people and invalids, for different reasons, have practically the same needs as the very young, and should wear wool or such combinations of wool with other fibres as will keep them warm and dry.

Occupation and environment. A sedentary and an active occupation make different demands. Indoor and outdoor work require different kinds of clothing. Shelter and exposure during work or going to work need consideration. An occupation which requires muscular activity calls for under clothing with greater power of absorption than does a sedentary occupation. Heating facilities in office or home and the humidity of the atmosphere affect the choice of clothing. In a humid atmosphere evaporation of moisture from the body is slow and must not be further decreased by an unwise choice of clothing. In a dry atmosphere evaporation is rapid and clothing that retards evaporation should be selected. These same things are applicable to the question of the relation of climate to clothing.

It will be seen that few absolute statements can be made regarding any one fiber, material, or garment for all wearers, since all the factors are interdependent. After studying these factors, however, it is possible to make application of them to any particular case and in that way to intelligently select a hygienic wardrobe.

PERSONAL QUERIES ON HOME ECONOMICS WORK¹

ROGER L. TOTTEN

Superintendent of Schools, Harrington, Delaware

SOCIOLOGICALLY CONSIDERED

How does vocational home economics now function in my school, directly or indirectly, in teaching how to bring up children better?

How can I make it more generally useful in that direction?

¹ A list of questions submitted to recall the general values in home economics education, and to show what results may be in the mind of superintendents as desirable.

Summary of an address and discussion at a meeting of the Home Economics Instructors of the State of Delaware, March, 1920.

ECONOMICALLY CONSIDERED

Am I building upon existing economic foundations, or am I presupposing different ones?

Am I teaching each girl how to derive the maximum use primarily from that equipment which will be hers to use?

Am I insisting upon a material condition which is desirable but humanly impossible in the future homes of any students?

Am I teaching how to raise the standard of living by true economy, leading to better equipment and conditions?

PEDAGOGICALLY CONSIDERED

Do I give opportunity and aid in developing basic manipulative skills?

Does my laboratory work develop basic skills?

Am I maintaining a just balance between skills, related technical knowledge, and related cultural knowledge?

Is technical knowledge accompanied by or preceded by related skills?

Do I build on home apprenticeship and undirected experience in developing skills, or do I ignore them?

Do I capitalize the strongest incentives, discover the most appealing motivation, and arrange the work accordingly?

Do I make effective use of the home as a coöperative agency?

Do I use "home projects" to the best advantage?

Does my course actually prepare for immediate practice of the vocation, without further apprenticeship of any sort? Can I make it do so?

SOCIALLY AND CULTURALLY CONSIDERED

Do I admit opposition between "cultural" and "vocational" education? If not, do I see to it that all elements of a liberal education are included in my course?

Do I use coöperative projects for their social value?

Is my course really developing "taste"?

Am I using pictures, discussions, readings, and other agencies to make the home a central power plant from which social energy and increase of culture emanate?

Am I developing high ideals of homemaking and of character?

Is my course producing enriched personalities, capable of enriching others?

SHOP METHODS IN THE SEWING LABORATORY: AN EXPERIMENT

MILLCENT M. COSS

Director of Clothing and Textiles, State Normal School, Framingham, Massachusetts.

The present emphasis on vocational training has made many home economics teachers stop and think, "How can we make our teaching of the household arts function most fully? What suggestions can we gain from business methods?"

Obviously a business organization must prove of economic value or it fails to succeed. When we had seen, through direct contact, the working organization of a shop for making clothing, we asked ourselves the question, What are the elements of a shop that turns out similar products to those of our home economics classes, which can be transferred or adapted to our school life?

Three weeks of the term remained for a class of thirty senior students in dressmaking. Throughout the three-year course all of the products of the class had been planned for and executed by the students for themselves; the materials had been bought by them and the completed articles used by them. Our desire now was to plan a project which should be stimulating, impersonal, and organized on a trade basis with necessary class-room modifications.

Here is the story of our experiment.

The teacher became the director of a large work room where dresses with individuality were made for girls from two to fourteen years of age. The class was divided into working units with a forewoman and three assistants in each group. The forewoman was responsible to the director for the making of a child's gingham dress with the greatest speed compatible with good workmanship. The director bought the materials at wholesale, planned the dress with the forewoman and supervised her cutting of it by a paper pattern. The forewoman gave out the material to her assistants, telling them what to do; managed the work so that there should be no loss of time through idleness; consulted with the director if any question arose as to design or method; kept an accurate account of all the materials used, with their cost; kept the time sheet of her group, each worker reporting to her at the class period any "overtime."

Each student was rated, potentially, at a fixed wage. A forewoman's rating was \$18 per week, an assistant's was \$15. Overtime was paid for at the same rate as class time. There were six three-hour periods and two one-hour periods of class time each week.

When one dress was so nearly finished that there was not enough work on it to keep the group occupied, a different forewoman was selected from the group, a second dress planned and cut and a new record kept, giving to each student the additional problem of keeping separate the time spent on the first dress and on the second. When there remained but two lessons the girls were urged to "speed up" as the shop was closing for vacation and no unfinished work should be left and more "overtime" was cheerfully given.

The following is a sample order sheet.

THE F. N. S. CHILDREN'S SHOP

Model No. 1500

Age 6 years

Date of order, January 5, 1919

Date of Sale, January 21, 1919

Workers: Miss ——— Forewoman

Misses ——— Assistants

Article: Child's Gingham Dress, green and white check with plain green trimming.

Cost:.....

MATERIALS			LABOR	
Items	Amount	Cost	Hours at \$0.285	Hours at \$0.425
Checked Gingham.....	2 yds.	\$0.50	3	4
Plain Gingham.....	1 yd.	.30	2½	
Edging.....	4 yds.	.16½	3	
Buttons.....	8	.12	3	
Snap.....	7	.03	3	3
Thread No. 90.....	1 spool	.05	3	
Basting thread.....	½ spool	.03	3	
Cost of material.....			\$ 1.20	
Cost of labor.....			9.74	
Total cost of garment.....			10.94	
Selling price.....			4.00	
Profit on materials.....			2.80	

At the end of three weeks, there were on hand sixteen well-made, exceedingly attractive children's dresses. A price, allowing a profit, was then fixed on each garment and the students, who were given the

first opportunity to buy, purchased several of the dresses. To dispose of the remainder, one corner of the room was arranged as a "Children's Shop" at the semi-annual exhibition of the Clothing and Textiles Department which was held at this time, and the dresses were placed on sale. It proved to be the most popular part of the exhibition.

It will be noticed that the cost of materials was low, due to wholesale buying; that the selling price does not take into account the cost of labor, because no actual wages were paid, but that the total cost including labor was estimated. This seemed legitimate since our project was primarily educational. It was voted by the class that the profits should be used to buy "luxuries" in the equipment of the department.

One of the satisfying results of the whole experiment was the splendid spirit manifested throughout. The forewomen, who were in the first place chosen on a scholarship-basis, showed for the most part initiative, executive ability, accuracy, and good judgment. The assistants did willingly such parts of the work as were assigned to them. Had there been sufficient time, the various members of the groups would have served as forewomen, in turn, in order to test the executive ability of each, but a longer experiment might possibly have resulted in loss of interest.

By this experiment we tested to our satisfaction a new method of approach in our teaching of dressmaking: we learned that the students were capable of good "team work;" that their interest can be maintained when the product is not for themselves. We demonstrated the importance of the "time element" in reckoning the cost of good workmanship. We taught the students, in a realistic way, how to apply their knowledge of sewing to the making of attractive but inexpensive dresses for children—an important part of their training whether their vocation be teaching or homemaking.

FOR THE HOMEMAKER

PUBLIC KITCHENS¹

It has been taken for granted that the food of the moderate income family will be prepared at home. In rural regions this must be the case because dwellings are too far apart to allow of service from outside; in villages, cooked food would be confined to what is furnished by bakeries, but in cities it is possible for the home table to be served with hot meals cooked in some central place. Restaurants have always furnished such service in a small way, but to serve hot meals on a large scale to families who will pay but a small advance over the cost of materials requires special coöperation and management. The Public Kitchen, much discussed, often tried, has special problems which have not yet been solved in this country.

Public kitchens in Europe. All European countries have their special type of self-supporting public kitchen in the large cities, where standard dishes are sold at very near cost prices to be eaten on the premises or carried home. Such kitchens became of great importance during the late war when food was to be conserved and when wives and mothers were away from home in war work and their time and energy were not available for home buying and cooking. Sheer necessity was back of the public kitchen in all of the large foreign cities; those already existing increased their equipment, and new ones were started, financed by public funds. It has always been the case in Europe that, when food is scarce and high, as in time of war or other great calamity, and the home as a manufactory of cooked food breaks down, there is seen a tendency toward mass feeding for the civilian population as well as for the army, and for similar reasons. Food can be purchased more cheaply in wholesale quantities and there is the least possible waste in the preparation of the food, it being directed by trained people.

English public kitchens in war time. In London in 1917 public kitchens were started on a large scale. In 1918 one thousand municipal kitchens were in operation in England.

¹ Part of a chapter in *Successful Family Life on the Moderate Income*. By Mary Hinman Abel. J. B. Lippincott Company, Philadelphia (forthcoming).

The following calculations of savings for a million families were made on the basis of a London kitchen which supplied daily 150 families, or on an average 450 to 500 individuals.² The cost of fuel in the universally used form of gas by the slot system was found to average two shillings per week per family, while gas fuel used in the public kitchen averaged two pence per family for the same amount of cooking. The saving was somewhat less if comparison is made with coal. A saving in food was effected, first, by buying at wholesale by trained and experienced people who knew how to take advantage of the market and were informed twenty-four hours in advance as to what foods were expected to come into the city. The cost of "many thousand tons of food" was thus saved. Second, by saving the waste that goes on in private kitchens where many small utensils are in use to which particles of food adhere in the processes of cooking. This waste was calculated as amounting to $\frac{1}{4}$ to $\frac{1}{2}$ ounces per person per day, or 7000 tons yearly for a million families in cereals alone, while 15 per cent loss in meat was calculated in private families as compared with better methods of cooking and serving in the public kitchen.

Such computations based on actual experience on a large scale are very valuable and can be utilized in any time of need when saving must be effected for large numbers.

Public kitchens in the United States. Circumstances have not required mass feeding on a large scale in this country although during the war educational kitchens, for demonstration of food conservation, and canning and drying kitchens were used in large numbers.

The type of public kitchen which is of special interest to the woman of the household is that which sells cooked food for home use; in its perfected form it delivers at the home the entire meal. Urged by the scarcity of household service, groups of householders have in a number of instances attempted to start such kitchens, not for the poor, as in Europe, but for the well-to-do. They are generally called Community Kitchens.

In the report³ of a valuable study, made by the Woman's Committee of the Council of National Defense, in 1918, on all kinds of public kitchens, this type was described with the final conclusion as follows:

² Report made by Mrs. Earl, June, 1917.

³ Agencies for the Sale of Cooked Foods without Profit. A survey of their development with particular reference to their social and economic effect. Government Printing Office, Washington, D. C.

"In America there is at present nothing encouraging to the enthusiast on communal cooking. The causes for failure in the past . . . (are) practically the same as those for the failure of most coöperative enterprises in this country—the unwillingness of Americans to submit long to the restraints which coöperation requires; and a lack of leaders who combine adequate ability in planning, buying, cooking, and serving food with general administrative experience."

It must be acknowledged that the considerable number of community kitchens run on the coöperative basis that have been started in this country in the last thirty years have had an interesting but in most cases a brief history. The most enduring was also the earliest, the New England Kitchen, started in 1890 in Boston, "to determine the successful conditions of preparing by scientific methods from the cheaper food materials nutritious and palatable dishes which should find a ready demand at paying prices." It had ample funds for experiment and the best of scientific backing, but its success as a business was determined not by the market furnished by households but by the demand of schools. Since 1917 it has furnished lunches to the public schools of Boston under the management of the Woman's Industrial and Educational Union.

The future of the community kitchen. Notwithstanding the negative results in former experiments there are good reasons for believing that certain changes which have come about in recent years will yet enable a good type of community kitchen to succeed. Those changes are:

First, the high price and scarcity of hired labor in the individual household.

Second, the high price of food which places emphasis on the saving to be effected by wholesale buying in the hands of trained and experienced people.

Third, the improvement in team work and the development of leadership among women, largely through their experience in war work.

Fourth, a growing intelligence as to the importance of well chosen and well cooked food and a greater value put on the work of trained dietitians and cooks such as would preside over such kitchens.

Fifth, the perfecting of insulated containers for hot delivery and also rapid automobile service. Neither of these were available for the earlier type of community kitchen.

Here would seem to be the foundations for a successful business, but difficulties are also to be faced.

The chief difficulty is found in suiting the individual patron who can be allowed but limited choice as to his food, unless the price of service is to be greatly increased. It must be remembered that to gratify this desire for personal choice the restaurants and hotels offer a long menu card; to meet it in the family, the housewife makes a study of the likes and dislikes of its members.

The second difficulty is in business management. Women are apt to undertake such work without sufficient training, and frequently do not call in the experienced person until matters have become desperate. Trained people must be employed from the first.

The requirements for success would seem to be, in addition to the all-important fact that experienced people must be in command and be given full authority:

First, sufficient capital to equip and also to sustain a kitchen for a long enough time to carry out the initial experiments in what must be recognized as a new field.

Second, standard dishes and combinations must be perfected so as to meet the requirements of nutrition and of palatability for the average taste.

Third, the tastes and requirements of the locality must be studied and met. This may be done gradually by encouraging suggestion and criticism of the meals served.

Fourth, the probable number of patrons must be ascertained in some way as a basis for the business, and the price of meals must be such as will compete successfully with home cooking. To convince the housewife that she can afford the dinners served by the kitchen may require work on the part of the publicity committee in the way of calculating for her the cost of the home cooked dinner, giving proper value to the different factors of: food bought at retail prices; time used in buying as well as in preparing and serving the food; fuel used; and wear and tear on equipment.

There may exist a great need of the Community Kitchen in any given locality and yet it will wait long for success unless it can convince the householder that it will give her a better value for her money than she can herself obtain by home methods.

It is this fourth requirement, the study of the possible patron, which may prove to be the most important of all these factors in success, for it will show the managers of a community kitchen what is their real rival, not some boarding house, restaurant, or hotel, but the housewife herself. Until the value of the housewife's labor in buying and cook-

ing the food for the family is rightly estimated and until other ways of employing her time in lucrative work are provided, community kitchens may continue to fail, even though they have learned to furnish excellent food at reasonable prices, because enough patronage has not been found.

The economic contribution of the housewife. In America the public in general has never seriously considered the economic value of the housewife's contribution to the family welfare, except in the case of the poor. It is accepted that the man who earns the lower grades of income can bring in only enough for rent and the raw materials of living. The woman of the family must keep the house, care for the children, make, mend, and launder the clothes and cook the food. The money value of these services is her necessary contribution to the income, and its value has been estimated in the case of the working man's family at not less than \$800 a year; without it the home of this grade cannot exist. That is, if the working man in question earns a thousand dollars a year, the wife's contribution may raise the actual family income to \$1800.

To the family whose income is \$2000 to \$3000, the contribution of the housewife in the form of services that have money value continues to be as necessary as in the case of the laborer's wife, for as the income rises, so also does the standard of living, and it cannot be compassed on the earnings of the man alone. Under the conditions and prices that prevail in 1920 the most feasible way for this woman to make her contribution is the same as in the case of the woman possessing the lower income, that is, through buying and managing for the household and in doing most of the work. She says she cannot afford any form of public cooking whose charges are much beyond the price of raw materials, because she can "work in" the buying of the food and the cooking of the dinner along with her other duties.

If the size of her family or the state of her health forbids the doing of all her work she is less apt to turn to a Cooked Food Service for relief than to employ a woman by the day for laundry and cleaning.

The families whose incomes are \$3000 to \$4000 and upward are those most apt to use the community kitchen.

Families of five living on this grade of income are able to employ the resident maid, whose complete cost is now nearly \$1000 a year, but frequently this maid cannot be found and in the emergencies that arise is the chance of the community kitchen. The kitchen will also be in demand to furnish the main meal of the day for the smaller family groups that are doing light housekeeping.

Only by trial will it be ascertained whether the patronage from the above groups will be sufficient to keep the kitchen going on a paying basis, and also what advance over the cost of the raw materials these patrons will pay. It is known that the price of the finished dish may be from two to ten times the cost of the raw materials, according to the quality of the cooking and the grade of service. For instance, in a college dining room with a regular daily attendance of 300 the price of the meal may not be more than twice the cost of the material. In hotels and restaurants of various grades the higher proportions prevail to cover higher overhead and profits.

It may be that in order to reach success a community kitchen must in some way obtain the patronage of the large number of families having less than a \$3000 income, in which families, as we have said, the housewife must save the difference between the cost of the raw food material and the price of the delivered meal as part of her contribution to the income. It would seem that this patronage is only to be gained by helping the housewife to make her absolutely necessary contribution in new ways that will equal the value of her services as cook.

An organization along coöperative lines might furnish her part time jobs outside her home, while at the same time arranging on better lines some of her present duties, as, for instance, by starting a creche for the care of little children for a few hours of the day, like the one which has been started by the families of the faculty of the University of Chicago,⁴ which would enable her to leave her home for certain hours.

A close study of the various occupations that make up housework may show that the services rendered by the housewife are so interrelated that it is difficult to lift out any one or two of them without reference to the rest, and the success of the community kitchen may be found to lie in making it an integral part of a large plan of service to the household. A plan, which would include not only the laundry, and the furnishing of all kinds of housework by the day and hour, but also an "exchange" which would take into account the economic relation of the housewife to the family income, by furnishing lucrative employment for a part of her day, is yet to be tried.

There is great need of actual experiment along all of these lines, and those groups of women who are undertaking the solution of any department of household service are conferring a great favor on the community. It should be borne in mind that the definition of success

⁴ A Coöperative Nursery, *Journal of Home Economics*, Feb. 1920.

in such a case is not that which would be used for a business enterprise, but rather that of the experimental scientist whose aim is the establishment of facts. If the aim is clearly held, the procedure well outlined, records carefully kept, and conclusions truthfully drawn, failure in the real sense of the word is impossible, for every experiment of the kind enlarges our basis of fact and brings success nearer.

Undernutrition and public cooking. There is another reason, and a very important one, for the establishment of the public kitchen on the broad lines that have been successful in Europe. Recent advances in scientific knowledge of food and nutrition have revealed new causes for diseased conditions of the human being and many of them are traced to wrong food; therefore the choice and preparation of food from a nutritional standpoint has become a serious matter, especially for the city dweller of small means.

Investigation has always shown a great deal of malnutrition among the poorer and more ignorant part of our population; it is the children who suffer most in health and development and the recognition of this fact has led to the provision of the school lunch for thousands of children in our great cities.

Commercial enterprises can not be trusted to meet this need; the product of the low grade delicatessen shop is costly, considering its quality, and frequently it is quite unfit from a sanitary point of view.

It may well be that there is a place in our great cities for the community kitchen as a purveyor of what people ought to eat if the food can be served at cost prices and meet the popular taste. It may work great changes in domestic conditions, especially in the home where there is too often neither the knowledge nor the equipment for cooking.

The platform of the woman's party in England called for communal kitchens "to economize food and labor and to provide the best food cooked in the most skillful way and sold at the lowest prices." In England great efforts are being made to keep up the kitchens that were indispensable during the war.

For every grade of family a community kitchen run in the interest of the public, perhaps as an adjunct of the Department of Health and presided over by trained dietitians, would be of the greatest service. There the main dish of the meal could be purchased in quantities estimated to furnish full nutrition for the family with the proper number of calories and drawn from the right sources to make a balanced menu. Such a dish or dishes would meet nutritional requirements making it safe for the family to spend the rest of their food money with a clear conscience on some preferred accessories.

THE HOUSEHOLD BUDGET

SARAH J. MACLEOD

Society for Savings, Cleveland, Ohio

The use of the budget in the home is slowly gaining favor among housekeepers, but a large number of women still meet the words *budgets* and *accounts* with one of these comments: "My income is so small that I couldn't do any differently with it anyway," or "Well, I have a good sized income so why should I bother with a budget?"

An answer to these arguments is that a budget is simply a pattern for one's spending and it bears the same relationship to the income as a paper pattern does to the material out of which a dress is to be made. If one has a small amount of goods, she adjusts her pattern and plans most carefully in order to get the essential parts of the garment out of the material. The same holds true in regard to the small income; if the spending is planned carefully, the chances are that one will obtain better food, clothing, and shelter than she would otherwise. On the other hand, if one were making a gown of very nice material, she would be most careful in adjusting her pattern because she would want the best effect possible, and the same principle is applicable in using a larger income; if she plans her spending it is most probable that she will get not only better food, clothing, and shelter, but also more of the other things in life that she really wants. After a subsistence income is reached, it is not so much the size of the income as the way in which the income is spent which gives satisfaction.

A budget is an individual thing; it is well to remember that budget figures which are so often published in women's magazines and by different organizations, are intended only as suggestions and are valuable in that they show how other people manage; the experience of others is always useful and helpful but one does not have to do the same thing that others do; instead, one can choose the best that others have to offer.

In making a budget, the first thing to do is to face the size of the income and if the income is variable, use the smallest amount one is likely to receive as the basis. Far too many people want to "take a chance" on the largest income that could possibly be received. This is a poor policy, for then, if one falls short and has to curtail, discontent is bound to result; whereas if one plans on the smaller income and the "extra" does come in, the surplus can be taken care of most happily.

The second thing to do is to decide what one wants out of that money and the next step is to plan so as to get as many as possible of the things that are wanted. The amounts allotted to the various divisions should be written down, for, when plan and figures are set down in black and white, one will not make changes without some thought.

Various divisions have been used in planning the household budget, but, whatever the classification, the important thing is to allow for all possible expenditures. The following classification has been found suggestive and useful and may serve as a basis:

Savings: Bank account; Investments; Life insurance.

Food: Meat and fish; Dairy products; Fresh fruits and vegetables; Groceries and ice; Meals outside the home.

Clothing: All wearing apparel and sewing supplies.

Shelter: Rent or taxes; Fire insurance; Upkeep; Repair.

Operating Expenses: Fuel, light, and telephone; Cleaning materials; Renewal of equipment; Service.

Household Furnishing.

Advancement: Education; Travel; Carfare; Gifts; Church and benevolence; Entertainment; Amusement; Club dues; Papers, books, and magazines; Stationery and postage; Physician, dentist, and medicine; Toilet articles; Personal taxes.

The budget is nothing more nor less than a plan for spending and, like any other plan, it is of no value unless carried out, and the only way to know how closely one is following the budget is by keeping accounts and comparing the results with the budget figures. The main reason for keeping accounts is to see how closely one is adhering to the standard set for one's self. A classified account form, whether in the form of cards or a book, shows this most easily. To be able to account for every dollar is very nice, but because accounts do not balance is no reason for giving up the keeping of accounts. Is it not better, for instance, to be able to account for 95 per cent of the income than to give up keeping accounts because 5 per cent is missing? One will have much more satisfaction in knowing exactly what one is getting out of 95 cents of every dollar that is spent than if it is not possible to account for any of the money. The longer one keeps accounts, the more easily they balance.

After keeping accounts, one is either satisfied or dissatisfied. If one is satisfied, it is because of the written proof that one has received what was most wanted out of every dollar handled and that it is not

possible to better the spending. Very often this feeling of satisfaction has been the greatest boon to the conscientious woman who perhaps has handled a great deal of money but who also has had heavy financial responsibilities and as a result has not been able to save as much as she desired.

On the other hand, when accounts show leaks and unwise expenditures, the feeling that results is far from that of satisfaction; but, instead of only having the feeling that entirely too much is spent, one can go over the accounts and pick out those expenditures which did not give full value, with the result that one will think twice before doing the same things again. A classified account shows the totals of the small spendings and these are the ones which most often cause the trouble. Twenty-five cents is often spent unthinkingly, but a twenty-five dollar purchase is sure to demand some thought.

Accounts are interesting and valuable when they are analyzed and used in making comparisons, either from month to month or from year to year. It is perhaps of some value just to know how much has been spent, but that can be found out without keeping accounts, by subtracting what is left from what is received. What one does want to know is how the money has been spent and what each dollar has yielded.

The first two of the ten commandments of thrift which were adopted by practically all organizations interested in the development of thrift are, (1) Make a Budget, and (2) Keep an Intelligent Record of Expenditures. These are of prime importance in managing a business successfully, and it is no less true that when the home finances are managed in a thoughtful way, greater happiness results because each activity in the home is better balanced, since it receives its just proportion of the income.

EDITORIAL

Thirteenth Annual Meeting of the American Home Economics Association, Colorado Springs, June 24 to 29. A preliminary program for the annual meeting of the Association has already been sent to each member. The final program will probably be issued before this number of the JOURNAL reaches its readers. Copies may be obtained by writing to the office of the JOURNAL. A number of additions have been made to the first program. More space has been given to public school work and several speakers of nation wide reputation in education are expected to be present. Each Section of the Association is ably represented in general sessions as well as in sectional conferences.

The thanks of the Association are due to Miss Marlatt, chairman of the program committee and to the chairmen of the various Sections for the time and effort they have generously given. Miss Allison, who has made the arrangements in Colorado, has had perhaps the most difficult task of all, and we are especially indebted to her.

"Education in general has been facing many new problems since the war and if home economics is to hold the place that it should in the educational field we must avail ourselves of every opportunity for conference. It will take the united efforts of all home economics workers to carry us over the top.

"Plan to meet in Colorado June 24 to 29, so that we may have the largest group we have ever had."

While it was impossible to procure convention rates tourist rates are available and have the advantage of allowing stop over privileges. Hotel accommodations may be secured directly from the hotels. The list was printed in the April JOURNAL. Any one who is unfamiliar with the attractions of Colorado as a place for meeting and for vacation should consult the May JOURNAL.

Some Results of Low Protein Diet. The recent war has contributed an abundance of data on the effects of restricted or inadequate diets in human nutrition. One of the most common diseases prevalent among the people of Europe during this period has become familiar under the name "war dropsy" or "hunger edema." The latter name implies that it is recognized as a form of malnutrition.

The most prominent symptom of the disease is an edema, or swelling, which in mild cases may be localized but in the more severe cases becomes general. Accompanying this edema, there are extreme emaciation, fatigue, soreness of the muscles, anemia, and greatly lowered condition of general nutrition. Susceptibility to infections and to exposure to cold are markedly increased. The skin becomes dry and scaly with frequent sores. Chemical analyses of the blood show a depletion of fats, lipoids, and glycogen, and diminished protein. This is not due to simple dilution with water, since the composition of the corpuscles themselves is changed.

The disease has been tentatively ascribed to almost every form of defective diet—lack of fat-soluble A and water-soluble B, insufficient fat, inadequate protein, restricted calories, deficiency of calcium, excessive carbohydrate, and high fluid intake. Some recent experiments reported by Dr. Kohman, of the University of Chicago, in the *American Journal of Physiology* for March, 1920, lead definitely to the conclusion that it is continued subsistence on a diet very low in protein which is really responsible for the development of this condition.

Denton and Kohman in earlier work observed that edema was produced in rats fed on a carrot diet in which the proportion of protein was reduced by the addition of starch or fat. These rats presented a picture very similar to that described in cases of "war dropsy." There was loss of weight, decreased activity, soreness of muscles, anemia, dry skin, and lowered resistance to infections and to cold.

Dr. Kohman modified the diet by the addition of generous amounts of fat-soluble A, water-soluble B, and mineral salts, and by substitution of fat for part of the starch. She found that no one of these factors had any effect either in preventing the disease or in curing it. On the other hand, a diet in which purified casein was substituted for a part of the starch prevented the occurrence of edema in well rats and acted as a cure if the disease had not progressed too far. In one single rat she was able to produce or cure the edema at will by decreasing or increasing

the amount of protein in the diet. Rats kept on a diet restricted as to calories but with an adequate quantity of protein, while they did not grow at a normal rate, showed no signs of edema. A high water intake and an increase in the acidity of the diet each caused more marked edema on the low protein diet, but apparently produced no deleterious effect when used in connection with the adequate diet. They seem to be accessory factors but not direct causes of the edema.

In an excellent review of this subject published in the *Journal of the American Medical Association*, April 3, 1920, Dr. Maver also arrives at the conclusion that "war dropsy" is not a deficiency disease in the sense that it is due to a lack of specific vitamins, but that it is the result of protracted existence on a diet deficient in amount, and especially deficient in protein. She also reports feeding experiments with animals which corroborate Dr. Kohman's results.

Much has been said about overfeeding of protein. Our attention is here called to the fact that there may be serious ill effects from the opposite extreme of protein underfeeding. The dropsy occurring in many conditions associated with defective nutrition, as in pernicious anemia and marasma in infants, is very similar to "war dropsy" and is probably the result of similar nutrition disturbances.

Food Idiosyncrasies. Strawberry rash and other disturbances of the skin and the digestive tract, following the eating of foods such as eggs, milk, and nuts, are but a few examples of food idiosyncrasies. These reactions are more accurately called anaphylaxis. They may be caused by abnormal behavior of protein in the body. If an incompletely digested protein finds its way into the blood through a faulty intestinal wall, the individual becomes "sensitized" to that protein; when the same protein is eaten several days or weeks later, the result of the sensitization shows in the ways mentioned above.

This phenomenon has for several years been known to be associated with various bodily disturbances: of the respiratory tract as in hay-fever and asthma (although the direct cause of trouble here is as a rule weed pollen, there may be an accompanying sensitivity to one or more food proteins also); of the skin as in eczemas; and of the gastro-intestinal tract causing vomiting and diarrhea. Park¹ cites an unusually violent

¹ Park, E. A., A case of hypersensitiveness to cow's milk. *Amer. Jour. Dis. Child.*, 19, 46 (Jan., 1920).

case of the last mentioned type. An infant six weeks old was found to be hypersensitive to cow's milk; at various times during the first year or so of his life, a drop of a highly diluted milk solution, a crumb of bread made with milk, a few drops of diluted condensed milk brought on alarming symptoms of vomiting, diarrhea, stupor, and prostration.

Sufferers from asthma, hay-fever, and eczemas have often been shown to be reactive to the proteins of one or many common foods by means of the "skin test." This test consists of the application of some of the suspected protein to a scratch on the skin of the inner forearm. A raised wheal in an area of redness at the end of a half-hour shows that the individual has sometime in the past become sensitive to this particular protein. Baker³ has recently used the test to detect sensitivity in normal children not known to have any anaphylactic history. As expected, he found the condition very rare in these children but the articles of diet giving positive or questionable reactions included foods which pediatricians have had to avoid in regulating the diets of children of erratic tendencies. In other words, the normal child occasionally showed the reaction previously found clinically in the abnormal. The foods causing an occasional positive reaction include oatmeal, potato, eggs, peas, rice, casein, beef-juice, chicken, and salmon. In many instances a child was reactive to only one, though he might be to several.

In children, this sensitization often tends to disappear spontaneously as they grow older, possibly because they desensitize themselves as they begin to eat the food in question regularly. Park reports that the child hypersensitive to milk partially desensitized himself by picking up stray crumbs; he was cured entirely by being given daily amounts of milk, increasing in nine days from 1 drop to 10 cc. Improvement in the condition of adults has in some cases resulted from avoiding the food at fault and in a few others by gradual desensitization with regular and increasing amounts of the food.

Practical application of knowledge of this kind to proper regulation of the diet has not yet become so extensive as it promises to become in the future. The understanding of the causes and symptoms of protein sensitization should aid in its interpretation of children's reactions to certain foods if these foods are taken in quantities too small to cause digestive disturbances.

³ Baker, H. M., The incidence of protein sensitization in the normal child. *Amer. Jour. Dis. Child.*, 19, 114 (Feb., 1920).

The Disinfection of Bathing Suits.¹ In order to enforce a legislative act in California controlling the sanitation and healthfulness of swimming pools, bathhouse, and bathing places and their appurtenances, an investigation of suitable methods of laundering bathing suits and towels was made. Detailed study was given to the technic of sampling the suits and towels and to the effectiveness of various disinfectants. Immersing and agitating bathing suits for fifteen minutes in a 1.5 per cent solution of a water soluble coal tar disinfectant, and towels for the same length of time in a solution containing 300-400 parts per million available chlorine was found to make them practically sterile. The best method of washing seems to be in hot water and soap for fifteen or twenty minutes, depending on previous disinfection, but further study on this point is recommended. The method of drying is also an important factor in the removal of bacteria. Sun-drying for six hours or hot-air drying for 1 hour at a temperature of 250-300° seems to be best.

THE OPEN FORUM

To the JOURNAL OF HOME ECONOMICS:

Does the JOURNAL approve of the scheme of the coöperative nursery described in the February JOURNAL? Why is it that any other work is considered more worth while than the rearing of the next generation, which is the most difficult task in the world whatever period is considered—the pre-natal or post-natal period, or the period of childhood or adolescence? What proportion of home economics teachers are in favor of such a scheme? Will governments be impressed with the importance of teaching mothercraft or child welfare work to women if educated women do not prize the opportunity of such work?

E. M. HUTCHESON.

The above letter was submitted to the author of the article in question, whose reply follows:

¹ Studies in Bacteriological Sampling and Disinfection of Bathing Suits and Towels, C. G. Gillespie, *Calif. State Bd. Health Mo. Bul.*, 15 (1919), No. 4, pp. 97-111.

Here is a mother, typical of many another living an apartment house life with husband and two small children. Johnnie *must* have some new nighties, the old ones are past patching, and she, herself, must have a spring hat. But how can she get down town? The husband is working all day and she feels diffident about dumping two children on her acquaintances however cordial they may be. Fortunately there is no difficulty in her case. She leaves them at the Coöperative Nursery on her way to the train and calls for them again at the close of her shopping trip, confident that they have been carefully guarded and have had pleasant companions while she has been away. The next week "Little Sister" is not well. John cannot be sent out alone to play on the street and the apartment yard is unspeakable. The mother must stay with the baby but fortunately John can go to the Nursery and be out doors in the big safe field all the morning. The next morning the baby is well again and it is the mother's day to help at the Nursery. To her it appears a privilege to watch her children as they play with others. She may notice qualities brought out there which are unsuspected at home and perhaps should be reproved. She gains useful ideas from the trained kindergartner and by learning more of many children is better able to understand her own. She uses the Nursery perhaps three times a week and regards it as a wonderful help towards the health and happiness of her whole family.

Then there are many others situated as is this mother, the wife of a graduate student. It has been a great financial sacrifice to come to the University for this longed for year of study. Because of the children she did not expect to be able to share the opportunity but she learns of the Nursery. The children go there every day while she attends the classes which will make her better fitted to help her husband or to do her home work intelligently.

The Nursery is not an alternative home. It is an assistant to the busy mother who cannot afford a competent nurse and wishes her children to share with other children the benefits of safe play both indoors and out.

MARGARET GOODRICH NORTON.

BOOKS AND LITERATURE

Some Household and Personal Expense Account Forms.

From a survey of a number of the personal and household account books on the market, it would seem that the classified account is the most popular form. The classification of the various account sheets is by no means uniform but at least an attempt at classification is made.

In addition to grouped expenditures, a classified account may also show the following:

1. Budget figures
2. Receipts
3. List of items with prices
4. Comparisons: (a) between different months of the same year, (b) between different years, (c) between the same months of different years
5. Daily totals
6. Grand totals
7. Balance

The following are some classified accounts with notations of what they show:

Household Account Books

The Economist Household Account. Economist Publishing Co., Berkeley, Cal. Shows 1, 2, 3, 4a, 6 and 7.

The Ferrin Money Saving Account Book. Independent Corporation, 119 W. 40th Street, New York City. Shows 1, 2, 3, 4a, 4b, 4c, 6 and 7.

A Budget Book with a Conscience. Y. M. C. A., 347 Madison Avenue, New York City. Shows 1, 2, 3, 4a and 7. This book lacks durability in construction and the space for entries is cramped.

Woolson's Economy Expense Book. Woolson Co., 120 W. 32nd Street, New York City. Shows 2, 3, 4a, 4b, 4c, 6 and 7. This book gives space for accounts for four years.

Household Accounts Simplified. Otis and Otis, 1822 Chadbourne Avenue, Madison Wis. Shows 1, 2, 4a, and 7. This book contains a nice mechanical device which shows all the monthly summaries without posting.

The Taplex Budget for Personal or Family Expenses. Shows 1, 2, 3, 4a, 4b, 4c, 6, 7 and 8. This book has space for accounts for four years.

The Prosperity Book. By Florence Barnard. Fort Hill Press, Boston, Mass. Shows 2, 4a, 6 and 7. This is a small book with some suggestive reading matter but unfortunately the space for entries is cramped.

Monthly Household Budget. American Society for Thrift, 220 West 42nd Street, New York City. Shows 1, 2, 5 and 6. This comes in large single sheets 12 by 19 inches in size and is ruled for use on both sides. It is ungainly and awkward to handle.

Taber's Household Ledger Sheet. The Chart and Record Company, Chicago, Ill. Shows 1, 2, 4a, 4b, 4c, and 7. This is designed for weekly and monthly records.

Home Account Book. Delaware Agricultural College Extension Service. Shows 2, 3, 6 and 7. The columns are not labeled, so the individual may classify to suit her own needs.

Personal Expense Books

Personal Account Book. Y. W. C. A., 600 Lexington Avenue, New York City. Shows 2, 3, 4a, 5 and 6.

The Ten Financial Commandments and How to Keep Them. Y. M. C. A., 347 Madison Avenue, New York City. Shows 1, 2, 3, 5 and 6. This has a very incomplete classification and gives space for expenses for only six months.

Personal Expense Account Book. Women's Educational and Industrial Union, 264 Boylston Street, Boston, Mass. Shows 2, 3, 4a, 5, 6 and 7. This book gives space for accounts for two years.

An Account Blank for College Students. Division of Home Economics, University of Minnesota, St. Paul. Shows 2, 3, 5, 6 and 7. This book stresses the clothing item and would be of especial value to one interested in clothing costs.

An account to be of value must tell those things which one really wants to know. A fully classified account does this but where an endeavor is made to save space by grouping a number of expenditures, one of the main purposes of a classified account is defeated, for often essential and non-essential expenditures are grouped together with the result that leaks do not show. It would seem that a classified account book should be either very fully and freely classified and even then a few extra columns left for special expenditures, or the columns should not be labeled, but a suggested classification given in the preface so that the user may label the columns to suit his own purposes.

SARAH J. MACLEOD,
Society for Savings,
Cleveland, Ohio.

Report on the Present State of Knowledge Concerning Accessory Food Factors (Vitamines). Special Report, Series No. 38. Compiled by a Committee Appointed Jointly by the Lister Institute and Medical Research Committee.

This Report of one hundred pages is essentially a monograph on the chemically unidentified food factors, and presents a clear and easily readable account of the established facts concerning these interesting substances at the time of its publication in June, 1919.

The Report was prepared by a Committee consisting of Professor F. Gowland Hopkins, Drs. Harriette Chick, J. C. Drummond, E. Mellanby and Professor Arthur Harden.

The enumeration of these names is a sufficient guarantee of the excellence of the work.

The introductory chapter gives an historical review of the early experimental work which led to the discovery of the existence of a new class of substances playing a prominent part in nutrition, the etiology of beri-beri and of scurvy, and an application of experimental work to the practical problems of human diet.

Rickets is regarded as a deficiency disease, of which xerophthalmia is but one feature. The authors are of the opinion that rickets is probably specific starvation for the dietary essential fat-soluble A, but this view is expressed with caution. A brief account is included of the experimental work which tends to illuminate the difficult problem of the etiology of pellagra.

An excellent bibliography is included which adds to the merit of the work. It is a pleasure to read such a sane treatise on a subject which has suffered so much misrepresentation at the hands of incompetents.

E. V. MCCOLLUM,
School of Hygiene and Public Health,
Johns Hopkins University.

Twenty-Four Little French Dinners. By CORA MOORE. New York: E. P. Dutton and Co., 1919.

This book, while containing some interesting material especially in the opening chapter, is too indefinite for the average housekeeper and the seasonings and materials called for are often difficult to obtain even in a city like New York.

The use of expressions such as "a pint of béchamel" or "a pint of velouté" is confusing to those who have not had the meaning explained.

The French cook would undoubtedly be guided by her judgment when told to put "celery, carrot, onions, etc." into a pan but too many housekeepers would not have the necessary good judgment.

On page 83 is a recipe for "Homards et Champignons" that is a good example of what is meant.

PAMPHLETS RECEIVED

Issued by the U. S. Department of Agriculture:

- Boys' and Girls' Club Work. Diseases and Insects of the Home Garden.* W. W. Gilbert and C. H. Popenoe. Department Circ. 35.
Rural Community Buildings in the United States. W. C. Nason and C. W. Thompson. Bulletin No. 825.
Selection and Care of Clothing. Laura I. Baldt. Farmers Bulletin 1089.

Issued by the Department of the Interior, Bureau of Education:

- Bibliography of Home Economics.* Carrie Alberta Lyford. Bulletin, 1919, No. 46.
Diet for the School Child. Health Education. No. 2.
Educational Hygiene. Willard S. Small. Bulletin, 1919, No. 48.
Federal Executive Departments as Sources of Information For Libraries. Edith Guerrier. Bulletin, 1919, No. 74.
List of References on the Project Method in Education. Prepared in the Library Division. Library Leaflet No. 9.
Stories for Young Children. List Prepared by the Literature Committee of the International Kindergarten Union and the Library Division. Library Leaflet No. 6.
Training Little Children. Suggestions for Parents. Bulletin, 1919, No. 39.

Issued by the U. S. Department of Labor, Children's Bureau:

- Courts in the United States Hearing Children's Cases.* Evelina Belden. Dependent, Defective, and Delinquent Classes Series No. 8, Bureau Publication No. 65.
Every Child in School. A Safeguard against Child Labor and Illiteracy. Children's Year Follow-up Series No. 3, Bureau Publication No. 64.
Illegitimacy as a Child-Welfare Problem. Emma O. Lundberg and Katharine F. Lenroot. Dependent, Defective and Delinquent Classes Series No. 9, Bureau Publication No. 66.
Illegitimacy Laws of the United States and Certain Foreign Countries. Ernst Freund. Legal Series No. 2, Bureau Publication No. 42.
Laws Relating to Mothers' Pensions in the United States, Canada, Denmark and New Zealand. Laura A. Thompson. Legal Series No. 4, Bureau Publication No. 63.
What do Growing Children Need? A Problem for Parents. Dodger No. 10.

Issued by the United States Public Health Service:

- A Homemade Milk Refrigerator.* Prepared by Direction of the Surgeon General. Public Health Bulletin No. 102.
Antenatal and Neonatal Factors in Infant Mortality. Reprint No. 528 from the Public Health Reports.

Issued by the Federal Board for Vocational Education:

- Third Annual Report of the Federal Board for Vocational Education, 1919.* Volume 1, Vocational Education. Volume 11, Vocational Rehabilitation.
Survey of the Needs in the Field of Vocational Home Economics Education. Bulletin No. 37, Home Economics Series No. 4.
The Garment Trades, May 1919.
Training Courses in Safety and Hygiene in the Building Trades, Bulletin No. 31, Trade and Industrial Series No. 6, May 1919.
Use and Preparation of Food, Bulletin No. 35. Home Economics Series No. 3, October 1919.

Issued by the College of Industrial Arts, Denton, Texas:
Appropriate Clothes for the High School Girl. Virginia M. Alexander.
A Syllabus on Design, Costume Design, and Interior Decoration For Art and Home Economics Teachers. College Bulletin.

Issued by the Home Economics Bureau of the Society for Savings in the City of Cleveland:
Budgets for Incomes of \$1500.00, \$1800.00, \$2400.00, \$3000.00, \$3600.00, \$4800.00.
Ten Commandments of Thrift.

Issued by the publishers listed:
Are You Getting Your Money's Worth. War Loan Organization, Fifth Federal Reserve District, Richmond, Va. Contains suggested budget and form for monthly expense account.
Budget Planning in Social Case Work. Bulletin No. 3, Committee on Home Economics, The Charity Organization Society, 105 E. 22d St., New York.
L'Education Familiale. (Monthly) Brussels, Belgium.
The Food Calendar. Extension Service University of Illinois, Urbana, Illinois. Arranged for daily record under five food groups. Price, 25 cents.
Girls Clothing Contest. Bulletin 109, Department of Education, State of Texas.
Household Weights and Measures (Kitchen Card). Miscellaneous Publications No. 39, Bureau of Standards, Department of Commerce.
Houses or Homes. First Report of The Cincinnati Better Housing League, June, 1919.
Oysters and Fish. Official Bulletin, Sept., 1919, Conservation Commission of Maryland, 512 Munsey Bldg., Baltimore.
Thrift in the Household. Wisconsin War Savings Organization, 415 E. Water St., Milwaukee, Wis.
Vocational Homemaking Education: Some Problems and Proposals. David Snedden, Ph.D. Teachers College Bulletin, Teachers College, New York City.
American Dyestuffs or National Disaster. Reprinted from *Textiles*, September, 1919.
Cafeteria Standards and Methods of Attaining Them. Nola Treat and Lenore Richards. Special Bulletin No. 44. Extension Division, University Farm, St. Paul, Minn.
The Case of the Bituminous Coal Mine Workers. Issued by the United Mine Workers of America, 1920. Sec. 2, *The Case for a Living Wage*, gives data on minimum and adequate standards of living with estimates made by Professors Ogburn, Chapin, and others.
Current Notes in Institutional Administration. Bulletin, Eleventh series, No. 7. Teachers College, Columbia University, New York City.
Eleven Years of Community Service. A Summary of the Work of the Immigrants Protective League. Issued by the Immigrants Protective League, Chicago.
The Hot School Lunch. Dorothy Buckley. Bulletin No. 16. Conn. Agr. College Extension Service, Storrs.
Homemaking in Wisconsin. Home Economics Teachers Exchange Ideas. Compiled by Helen C. Goodspeed, Supervisor of H. E., State Dept. of Public Instruction. Issued monthly.
Low Cost Menus. Costing \$20 a Week for Five Persons. Alice Bradley. Issued monthly by the Woman's Home Companion, N. Y. City. Price, 10 cents.
Planning the House. An Outline Course for Use with Clubs. Elizabeth Jenkins. House and Home Series, The Woman's Press. N. Y. City.

Rural School Sanitation. Dr. E. M. Pickens. Issued by the Maryland State College, College Park, Md.

When Potatoes are Plentiful. The Cornell Reading Course for the Farm Home, April 1918. Food Series. Lesson 118. N. Y. State College of Agriculture at Cornell University, Ithaca, N. Y.

Pamphlets on Natural Gas. Issued by publishers listed:

Catechism on Natural Gas. Dept. of the Interior, Bureau of Mines.

Supply and Conservation of Natural Gas in the State of Pennsylvania. In three parts: Proceedings of Conservation Conference in Pittsburg on January 8, 1919; Present and Prospective Supply of Natural Gas Available in Pa.; Smithsonian Institution Bulletin No. 102, Part 7, Natural Gas, its production, service, and conservation. Issued by the Public Service Commission of Pa., Harrisburg, Pa.

Kitchen Tests of Relative Cost of Natural Gas, Soft Coal, Coal Oil, Gasoline, and Electricity for Cooking. Issued by Ohio State University, Columbus, Ohio.

Waste and Correct Use of Natural Gas in the Home. Samuel S. Wyer. Issued by the Dept. of the Interior, Bureau of Mines.

Natural Gas and Natural-gas Gasoline in 1917. Contains a list of names of the natural gas using towns in the United States. Issued by the Dept. of the Interior, Bureau of Mines.

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Illuminating engineering practice. New York: McGraw-Hill, 1917. p. 395-413: The lighting of the home, by H. W. Jordan.

Keene, Edward Spencer. Mechanics of the household; a course of study devoted to domestic machinery and household mechanical appliances. New York: McGraw-Hill, 1918.

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Clewell, C. E. Decorative lighting for the home. *Electrical Age*. New York, 1916. Vol. 49, No. 5, p. 27-28.

Clinton, W. C. Recent developments in public and private lighting. *Illuminating Engineer*. London, 1919. Vol. 12, p. 287-89.

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¹ Furnished by the New York Public Library. For additional references see periodical: *The Illuminating Engineer*. London.

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Harrison, Newton. The scientific lighting of a home. *Central Station*, New York, 1914. Vol. 13, p. 341-44.

Pierce, R. F. Residence lighting with special reference to semi-indirect illumination. *American Gas Light Journal*, New York, 1915. Vol. 102, p. 322-24.

Powell, A. L. The lighting of a simple home. *Illuminating Engineering Society. Transactions*. 1914. Vol. 9, p. 45-66.

Riley, Percy G. Radiation in ornament. *Carpet and Upholstery Trade Review*, 1917. Vol. 48, no. 12, p. 64-66.

MISCELLANEOUS

A system of dietary follow-up work, B. B. Titus. *Mod. Hosp.*, 12 (1919), No. 1, p. 67.

Menus compiled by dietitian for officers' hall and maids' and helps' cafeteria [of the Hotel Pennsylvania, New York City], *Hotel Mo.*, 27 (1919), No. 321, pp. 58-60. These menus for a week are included in an article discussing the equipment and operation of the Hotel Pennsylvania. Much attention is given to the food and the dining room management, laundry, and other problems of interest to students of food and home economics. As apparently home cooked food is what many patrons desire, a special kitchen has been equipped in charge of a dietitian with home economics training, and special mention of this fact is made in the menu cards.

Time-savers for the accounting and the laundry departments [of hospitals]. L. H. Burlingham, *Mod. Hosp.*, 12 (1919), No. 1, pp. 21-23, figs. 4. The advantages of using an individual payroll card are pointed out, with the claim that time is saved and friction obviated. A simple method for caring for the linen, which obviates a central linen room, which it is believed is a time saver, is described. Instead of being piled into baskets and taken to the linen room, sorted and placed on shelves, and then transferred from the shelves to the carriers and thence to the wards, it is taken directly from the laundry machines to sorting shelves in the laundry and from these shelves it is placed in baskets for the various wards and delivered to them directly from the laundry.

Posture and its Relation to Health. John B. Blake, *The Commonwealth*, May-June, 1919.

Housing Investigation. George Whipple, *The Commonwealth*, March-April, 1919.

Home Work in Home Economics. Vera B. Tice, *Indus. Arts*, September, 1919.

Lessons in Foods and Cookery, with Simple Appliances; Foods ready without Cooking. Anna Barrows, *Amer. Cookery*, 24 (1919), No. 1, pp. 26-29.

Breakfasting as a Fine Art. *Atlantic Mo.*, Nov., 1919.

NEWS FROM THE FIELD

The Southern Home Economics Association. The fourth annual meeting of the Southern Home Economics Association was held in New Orleans, March 18-20, inclusive, with the largest attendance in its history. Mary E. Creswell, State Supervisor of Home Economics for the state of Georgia, and President of the association, presented a most excellent and comprehensive program.

An outstanding feature of the meeting was the fact that the attendance represented every phase of home economics work. College professors, high school teachers, rural teachers, vocational workers, and county, district and state home demonstration agents were all represented on the program and in the audience.

The officers of the association were: President, Mary E. Creswell, Supervisor of Home Economics for the state of Georgia; Vice President, Mary E. Sweeny, Supervisor of Home Economics for the state of Kentucky; Secretary-Treasurer, Susie V. Powell, Assistant Director of Extension work for Mississippi.

The St. Charles Hotel was headquarters and the meetings were held in the Art Building of Sophie Newcomb College with the exception of the opening session which was held at Tulane University.

Welcome was extended to the association as follows: to the City, Dr. J. M. Gwinn, City Superintendent of Public schools, New Orleans; to Tulane, Dr. A. B. Dinwiddie, President of Tulane University; to the State, Hon. T. H. Harris, State Superintendent of Education; to the Home Economics Department of Sophie Newcomb Memorial College, Harriet Boyer, Professor of Domestic Science; to the Louisiana Extension Department, Norma Overbey, State Home Demonstration Agent; to the Home Economics Department of the Public

Schools, Cleora Helbing, State Supervisor of Home Economics.

Miss Creswell responded to the cordial words of welcome most graciously and accepted the hospitality in the name of the association.

A masterly address was made by Mrs. Henrietta Calvin from the Bureau of Education, Washington, D. C., on what Home Economics Should Stand for To-day, epitomized as Health, Thrift, and Americanization.

In the afternoon an illuminating address was made by Ola Powell, Assistant in Home Demonstration Work, U. S. Dept. of Agr., Washington, on Recent Progress in Home Demonstration Work.

This was followed by an address by Adelaide Baylor, Federal Agent for Vocational Education, on What is Vocational Home Economics?

Friday morning the association met in three sections, the Section of Elementary Schools, the Section of College and Normal Schools, and the Extension Section. Friday afternoon, the association visited the Newcomb College Schools of Art and Home Economics and listened to addresses by Prof. E. Woodward, Director of the Art School and Mrs. Gertrude Smith, Professor of Water Color.

The social features of the meeting, planned by the entertainment committee, Miss Boyer and Miss Helbing, were delightful.

On Thursday afternoon the entire association had an enjoyable auto tour of the city, and Thursday evening a typical French banquet at the famous Antoinettes.

Friday afternoon the Senior Class in Home Economics gave a delightful picnic at the historic Spanish Fort.

Saturday afternoon there was a boat ride down the river to see the greatest inland harbor in the world. Sunday morning a tour through the French quarter was con-

ducted by Mrs. Alma Stephens of Sophie Newcomb College.

At the final session of the association, Mrs. Grace Wilmot of New York City gave a delightful talk on Art in Decoration, and Mrs. Virginia Eaton, Agent in Dairying, told how the Milk Campaign in Louisiana was made a success.

The following officers were elected: President, Harriet Boyer; Vice-President, Louise Turner; Secretary-Treasurer, Laura Neale.

Invitations were extended to the Association for next year's meeting by the Alabama Home Economics Association, by Edith Thomas of Florida State College for Women, and by George Peabody College for Teachers.

SUSIE V. POWELL,
Secretary-Treasurer.

The New England Home Economics Association held an all-day meeting at Simmons College, Boston, on April 10. At the morning session, devoted to the subject, Ways of Meeting Shortage in Household Service, Mrs. George U. Crocker spoke on the work of the Boston Bureau of Household Occupations in placing superior women in households on a business basis, and Mrs. James Odell spoke on the success of the Evanston, Illinois, Community Kitchen in delivering hot, home-cooked dinners to households. After luncheon in the College lunch room, the Social Workers Teachers, and Homemakers Sections joined forces to discuss What Changes are Needed in the Teaching of Home Economics to Meet Present Conditions. The key note of the speeches of Lucy Gillett for the social workers, Miss Howard for the teachers, and Mrs. Horatio Dresser for the homemakers, as of the morning speeches, was the necessity of preserving the home as a means of happy, healthy, useful, development. Short talks from the floor and lively round table discussion followed.

The Story of a Fellowship. During the war when the production of beer was prohibited the Fleischmann Yeast Company could no longer obtain malt sprouts from the brewers. They found, however, that the malt sprouts seemed necessary for the nutrition of the yeast. Dr. Lee, the chemist for the Fleischmann Company, called on Dr. Koch of the University of Chicago to ask whether it would be possible to have a man work in the laboratory there on the nutrition of yeast to discover if possible why the malt sprouts are so important for yeast growth. The consent of the president of the University was obtained and the Fleischmann Company gave a fellowship of \$1500 to extend over two years. Dr. Williams who held the fellowship found that water-soluble vitamins present in sprouting grain is one of the factors necessary for yeast growth, and incidentally suggested the growth of yeast as a means for testing the amount of water-soluble vitamins present in a solution.

The fellowship has been continued for another two years and has been granted to Mr. F. K. Swoboda who is trying to discover what effect different forms of nitrogen have on the growth of yeast.

Courses on Child Care. Dr. Dorothy Reed Mendenhall of the U. S. Children's Bureau is to give two courses on Child Care this summer at the University of Chicago, one on the Hygiene of Maternity and Infancy and the other on the Hygiene of the Older Child. Observations will be made in the Child Health School for underweight children which is to be held this summer under the auspices of the Home Economics Department primarily for the training of teachers for nutrition classes for children. Miss Lydia Roberts of the home economics faculty will be director of the school and Dr. Mendenhall and Dr. Walter Hoffmann of Rush Medical School will serve as medical advisors.

OMICRON NU

Alpha Chapter, the mother chapter of Omicron Nu, was organized at Michigan Agricultural College in April, 1912. Since its organization, meetings have been held often, this year two meetings a month, at which topics of interest have been discussed and sewing done.

In the spring term of 1919 the annual tea for the Freshmen was held. The purpose of the tea is to acquaint the girls with the ideals and aims of Omicron Nu. In the fall term of 1920 plans for the year's work were discussed. Sewing for the United Charities of Lansing was a large part of the program. At Christmas Omicron Nu joined her efforts with those of the Y. W. C. A. in giving a Christmas tree and feast to the children of a very poor district near the College.

Kappa Chapter elected to membership four former Washington State students who graduated in home economics previous to the establishment of our chapter. The new members, Elmina White, Ruth Kennedy, Inez Arnquist and Myrtle Boone, are county demonstration agents who have experienced unusual success in their work. They were in Pullman at a large convention of the extension workers of Washington.

Omicron Nu's big event this semester, an at home or open house in Van Doren Hall, our home economics building, was held during the first part of May. Committees at work on the arrangements promise interesting features including exhibits of home economics work, a tea room, and a musical and dramatic entertainment. A sale of cakes, pies, and tarts was also held following the annual gymnasium show and attracted the large crowds assembled in the gymnasium that evening.

Lambda Chapter of Omicron Nu took over the regular monthly meeting of the Home Economics Club at the Oregon Agricultural College for the purpose of observing Ellen H. Richards' day. A special program with music was planned.

Ava B. Milam, Dean of the School of Home Economics, spoke to the girls on the life of Ellen H. Richards, giving them the inspiration she had received from Mrs. Richards' life.

Dean Milam also told of her trip East to attend the meeting of the Association of Agricultural Colleges and Experiment Stations at Chicago and the Council meeting of the American Home Economics Association. Dean Milam, while on this trip, also visited the schools of home economics at the Universities of Chicago, Illinois, and Wisconsin, and Kansas State Agricultural College.

Theta Chapter, located at the Kansas State Agricultural College, was recognized by every student in the institution as a factor in securing better conditions for practical home economics work, when the chapter secured for their college the Better Homes Institute.

The Institute, which consisted of eight numbers given by representatives sent out by the Chicago Art Institute, was held at the college auditorium from March 8 to 12. The programs given during the institute included interior decoration demonstrations, dramatizations of home furnishings, and other practical demonstrations in which the audience was actually shown how to arrange and furnish a home. Generalized talks on planting the home grounds and building the home were also included in the program.

Omicron Nu gained the cooperation of the club women of the city of Manhattan in getting the ideas of the Institute before the public; the patronesses, who were chosen from the faculty and the townswomen, did much to interest the townspeople in the Institute. Teas were held after several of the programs at which those especially interested were given an opportunity to examine more closely the art and architecture exhibits which accompanied the Institute. At these social affairs, the Omicron Nu girls, and the patronesses of the Institute were hostesses.

The Better Homes Institute, which was a financial as well as an artistic success, served as a means of getting the work of Omicron Nu before the public, and secured from the press much commendatory comment on the work of the organization.

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IS THE CHINESE DIET ADEQUATE?

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The Chinese people have a very varied diet—eggs, meat, fish, fruit, cereals, and a great variety of vegetables. The common notion that rice is their only food is far from true. Rice merely takes the place of the American bread. Some people, ignorant of the real condition in China have argued that if rice is the chief food then “surely the minerals, vitamins, and adequate proteins which are decidedly deficient in rice cannot really be necessary,” but the facts are that the Chinese as a race probably have greater variety in their food than the Americans and more sources of the essentials of an adequate diet.

Pork is their chief meat. It is used by practically all classes of people in all parts of China. A meal without pork is considered to be unusually simple and with the exception of vegetarians is used by slaves or very poor people only. Fresh pork is such a common food that wealthy people will not even touch it. During new year festivals and birthday or wedding celebrations a whole dressed hog or a half of it is often purchased and consumed by the family and their guests. Lamb, however, may be substituted for pork, but beef is considered more or less sacred and is very seldom used as food. The quantity of meat eaten is small; it is usually served cut into small pieces and mixed with vegetables in a great variety of ways.

Fish and shellfish, including crabs, shrimps, lobsters, oysters, and the like, are always so much in demand that many fishermen raise them in their private ponds. Not only are they sold at the market, but they may be purchased from the peddlers who go from house to house every

morning. The peddler has a heavy bamboo stick across his shoulder, and suspended from each end of it is a big wooden tub containing a great variety of fish swimming lively in the water. Dead fish is either thrown away or given to cats and dogs; it is almost never considered fit for human food.

Unlike Americans, who consider the muscle of an animal almost the only edible part, the Chinese people eat practically every bit of the animal excepting hair and bones—the brain, spinal cord, and the various organs, even the skin and the blood. The blood is permitted to coagulate after it is drawn from the animal and comes on the market in brownish cake-like pieces, which look like liver. The people are entirely without the feeling of repulsion toward it that the occidental has. Blood is one of the inexpensive foods and is therefore used quite liberally. Very little work on its food value has been reported. However, it is a known fact that carnivorous animals, which eat not only the flesh and organs of an animal but blood and bone marrow as well, can live for generations and generations on their prey alone. On the other hand, laboratory animals cannot survive more than a few months on a diet of either meat or organs as the sole source of food supply. This fact seems to show that blood furnishes at least a part of the constituents necessary to life, which are either lacking or deficient in flesh and organs. It seems, therefore, that the liberal use of blood has probably helped the natives in getting an adequate diet.

Although large chicken farms are absolutely unknown in China, I have no doubt that more chickens are raised there every year than in this country. Everybody who owns a little piece of back yard raises a few chickens and several ducks. They are, therefore, sold both at the market and by peddlers. From market one need not buy a whole fowl, but may purchase such part as is desired, for example, a half dozen duck's heads or a dozen duck's feet to use in soup, or ten or more duck's tongues to prepare the delicacy of duck's tongues cooked with ham. Fowl are more expensive than either pork or fish and therefore are almost never used by the poor. However, they are consumed so extensively by the wealthy that they furnish probably their chief source of adequate protein. Geese, pigeons, turkeys, pheasants, and many other domestic and wild birds are also used as food, but owing to their scarcity, they are considered more or less as a delicacy.

Eggs are used very freely in the Chinese diet, not only hen's eggs but duck's and pigeon's. As in America they are cooked in many ways—

boiled, fried, scrambled—and in addition they are used for seasoning, garnishing, making noodles, and preserving. Thus eggs in one form or another are almost always found in chop suey, chow mein (fried noodles), won dung (meat dumpling), mein ee (something like pan cake), and many other dishes. One of the forms of eggs of which Chinese people are very fond is the so-called “tea eggs.” To prepare these, fresh hen’s eggs are hard boiled, the shells cracked, and the eggs then cooked for hours in a mixture of tea infusion, salt, spice, and soy bean sauce. When the price of eggs is low “tea eggs” are often prepared and kept warm on the stove so that any member of the family may help himself to them as Americans do to candy or nuts. Hen’s eggs are usually very cheap. Ten years ago they were sold at three for a penny. People of moderate means usually bought them by the hundred and kept them on hand all the year around. An ordinary day’s diet for a family easily contains a half dozen eggs or even more. Even poor people who keep their own hens use eggs fairly freely. Slaves and servants, however, are given only a few, for vegetables are usually cheaper and the eggs regarded as no more desirable.

A distinctly Chinese use of eggs is for preservation. At least three different kinds are produced—hulidan or salted duck’s eggs, dsaudan or fermented eggs, and pidan, the so-called “Chinese old eggs.” The first kind is prepared either by simply immersing fresh duck’s eggs in a saturated cold solution of common salt or by coating them with a mixture of salt and red earth or wood ashes. After one month or longer they are ready for use. They are eaten hard boiled and their appearance is not much different from fresh eggs.

“Fermented eggs” are not so simple to make. To prepare them clean fresh duck’s eggs are packed in jars containing a mixture of salt, clay, and fermented boiled rice and stored away for six months or so. The shell of the egg has then been dissolved entirely or softened and the inner membrane of the shell is greatly thickened. The egg is somewhat coagulated, and looks like a soft boiled egg, but it has a strong wine-like taste and odor.

Pidan, the third kind, is a factory rather than a home product. The fresh duck’s eggs are washed, coated one by one with a mixture of lime, wood ashes, salt, and tea infusion, and stored away for six months to a year or even longer. Then they are covered further with rice hull and are ready for the market. By this time the texture of the egg is almost like that of hard boiled eggs, the yolk is greenish gray, the white looks

exactly like coffee jelly, brown in color and translucent. The egg has an ammoniacal odor which is decidedly different from that of spoiled eggs. It tastes salt and slightly pungent. All the natives are very fond of it and consider it more or less as a delicacy, using it in the same way as Americans use cheese.

It is partly this extensive use of eggs by the Chinese people that makes their diet adequate, supplying the necessary adequate proteins, salts, and vitamins. Milk they use little or none. Cows as domestic animals are employed only for draft purpose. Babies, invalids, and the aged are sometimes given human milk, but the usual child and adult never tastes milk at all. Mothers nurse their children for long periods and then sometimes secure a wet nurse to prolong the nursing till the child is a year and a half to two years old.

Vegetables are used much more freely by the Chinese people than by Americans. In addition to the common ones such as spinach, cabbage, potatoes, radishes, and the like, many plants and weeds are eaten which are not usually considered as food in America. Thus radish leaves, shepherd purse, bamboo sprouts, and a large number of sea weeds are used as food. Being lovers of vegetables the Chinese people are skilled in cultivating them and in manufacturing new food articles from them. There are at least six or seven varieties of spinach differing from each other in the size of the plants, the size of the leaves, the length of stems, and the thickness of leaves. The one which grows most abundantly in the central eastern part of China looks somewhat like cabbage. It differs from the latter in that it has large, thick, straight leaves which are rather loose and very few in number. This plant contains so much fat that the vegetable oil which the natives use is made from it. With the exception of about two months it is produced all the year around. It is extremely inexpensive and is often bought by the ton. It is often dehydrated or preserved by means of salt and spices.

Even more abundant than spinach is soy bean. There are no less than twenty different varieties of it, and from them some thirty or more bean products are manufactured. Tu-fu (bean curd), fun-see (noodles made from bean flour), and nga-tsai (bean sprouts) are some of the bean products. Bean sprouts are especially interesting. They are one of the most inexpensive foods and are used in large quantity by every Chinese. There are three different kinds of them—all equally delicious. One is made from small green beans, while the other two are from larger beans of different color. All beans are known to contain water-soluble B, but

the soy bean contains also a considerable amount of fat-soluble A. Beans, on sprouting, have been found to develop their vitamine content, including the antiscorbutic vitamine. Thus sprouted beans have been used to cure scurvy. From the above facts it may be seen that bean sprouts make a good source of the three vitamins, and their liberal use in China must therefore have supplied one of the protective foods.

There is not so much difference in the use of cereal products in China and the United States as is usually thought. In the south and the central eastern part of China where rice is produced abundantly it takes the place of wheat, but in the north, such as Peking and Shantung, wheat, corn, and millet seed are used rather than rice. The rice usually is unpolished. Polished rice is a rather expensive luxury limited to the rich. The wheat flour used in the north is white, much like American flour, but probably it is not so highly milled. The millet seed, ground or whole, is made into cakes or a thin mush eaten especially by children. As far as taste is concerned it is decidedly less palatable than either rice or wheat products, but its food value is probably higher than either of them. Dr. McCollum has found that unlike other cereals, millet seed contains a considerable amount of fat-soluble A.

In very poor families instead of meat and other more expensive foods the ration consists chiefly of unpolished rice (or, in the north, of millet seed and corn), bean curd, green onions, sometimes salt fish, and invariably a large quantity of leafy vegetables including bean sprouts. Owing to the choice of foods it seems to me that there is less danger of inadequate diet in China than in this country. The eggs, blood, bean sprouts, and the liberal quantity of leafy vegetables have probably served as the protective foods in China.

THE PLACE OF THE GENERAL COURSE IN HOME ECONOMICS¹

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I know not to what extent accident or design controlled our chairman in asking me to present a discussion of the subject assigned me. I am certain that I could hardly have chosen a more congenial topic. What greater challenge to one who experiences increasing appreciation of a background of college work for both classical and literary degrees before taking up the study of home economics than this part of her letter: "Is there any longer a place for a general course in home economics? Some think there is not." I could not resist that. I confess I was shocked and appalled at the statement, for I had not realized that we had gone so far in our enthusiasm for the work in which we as a group must profoundly believe, but which I sincerely think we can in no way so successfully defeat as by such an attitude. Dare I add without danger of misunderstanding and offense, as a too discourteous champion, that I have been more than once forced to use great restraint not to point out to those berating the arts courses as designed for much waste of time, that the very English in which they contended would seem to prove the value of further lingering within the class rooms where language appreciations are essentially obtained?

But let us come to our subject. What is a general course in home economics? I take it that this may be either a course intended for those not definitely decided upon a vocation and therefore not wishing to specialize or a course containing the fundamentals of home economics in its various phases without attempting specialization through advanced courses in any one particular phase of the subject. This term may be applied, I should suppose, either to a course in the College of Arts and Sciences which recognizes a minor elective in home economics, or to a course leading to a degree in home economics in which the required home economics is of a general nature, rather than specialized, in food, clothing, household management, and the like. Defense of a general course seems to me to involve an appreciation of a general admixture of subjects other than home economics and also a sufficiently broad representation

¹ Presented at the Thirty-third Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, Chicago, November, 1919. Published also in the *Proceedings* of the Association.

of all the phases of home economics to give a well-rounded acquaintance with its subject matter rather than a highly specialized grasp of a limited field.

In the first place, we cannot afford to lose sight for a moment of the great basic reason for education, by which I believe that every undergraduate course should be carefully tested. This leads to a recognition of the five-fold intellectual inheritance as the most precious of possessions for any human being, and that as surely as we profit by inheriting the experience of others in ways of *doing* the things to be done in life, so we may acquire invaluable aid in self-direction and service by appropriating the thought life of the past. This inheritance has been helpfully subdivided for us into the five groups of our scientific, literary, esthetic or artistic, institutional, and religious inheritances. Recognition of the value of each of these groups is to be found in all past orthodox curricula and an appreciation of the value of each of these gives significance to the chemistry, language, music, history, education, comparative religions, Bible or other ethical courses prescribed as requirements. No one of these groups can be ignored without intellectual crippling, arrested development, a limiting of mental efficiency. The more fully election is made from each and all, the more splendid and rich the equipment. In view of this it seems to me that those who have the arrangement of a required course of undergraduate study have a grave responsibility to see to it that a student is not allowed to specialize in any of these groups to the exclusion of some knowledge of all of them, the more evenly distributed, the better. In this lies the danger of a too free elective system. Of course wide free choice still remains as to the particular science, history, literature or language a student pursues, in defense of which I should say that it remains with the teacher of the first essay into either one of these fields to make the subject matter so compellingly essential to the student that life thereafter becomes a further search into the varied resources of that group.

Sad as physical defects are, can there be a sadder spectacle or experience than that resulting from intellectual blindness, deafness, or dumbness in an age so appealing for many-sided reactions, so rich in all it offers both of personal appropriation and opportunities to share? Merely from the standpoint of success do we not see at the present time as a result of rash ignoring of these essentials for development, pitiful failures not due to lack of specific knowledge, but to ill-fitting adjustment through lack of appreciations? It is the most common criticism I hear, and I believe it an especial danger in vocational training.

But perhaps we are not so far apart in the ideal as it sometimes seems. There still remains the question of whether such a general course is possible. Do students or their parents want it? Can an institution hold to it as an ideal, divergencies being frankly recognized as necessarily unfortunate compromises in some cases. I believe that it can, and that there should be such a course. Therefore, while entirely endorsing vocational training as highly desirable during undergraduate study, I believe very firmly that few undergraduate students are able to decide, at least before senior year, what their happiest selection in vocation is to be. Perhaps my own five years of teaching Greek before I found myself colors this conviction, although I recognize present day improvement in vocational opportunities.

I believe strongly, moreover, in the dwarfing which must result from crystalizing interest in study upon a given subject or group of subjects too early. An undergraduate student should be an octopus, reaching out hungrily in every possible direction with the eagerness, which gives zest, of not knowing in which direction the richest food supply is coming. This much conceded, I am wholly ready to give place with all my heart to a reasonable amount of such applied material as courses in home economics present, believing that if properly presented, they quicken interest in, and desire for, the more abstract material. But I cannot believe that undergraduate work in home economics should ever be allowed to be so specialized, that, later, teachers of foods have no proper conception of clothing, or vice versa, and I believe that our departments today are weakened by the presence of some thus wrongly limited.

Now I have not spoken in ignorance of what the actual working conditions for all this are today. There is intense pressure away from such a course, at a time when young women are needing and seeking highly vocational training as never before, and when special funds would limit for specific use all teaching done under their aid. It is no child's problem for a small institution, of limited facilities especially, to determine what to do. I can only declare that personally my deepest interest and belief is in the undergraduate courses in home economics offered as electives to students in the college of arts and sciences, which are made as rich and full of subject matter as is possible in junior and senior years. Next to this comes my regard for the general home economics course which gives place to as large recognition of language, English, history, art, general science as possible, with so much of general courses in home economics as will prepare for intelligent homemaking or teaching in a junior-

senior high school. The true student who needs more will return at her earliest opportunity for graduate work in her chosen field. She will never go back for the general courses.

So strong is my conviction in this that when the test came, I insisted that for our institution such a course must stand, whether acceptable for special purposes or not, and no modification has been made except the introduction of a course in special methods. This with two possible electives has, fortunately, been sufficient to make our course acceptable for all that is asked of us at present.

I was greatly encouraged last year to believe that I was not wholly out-run and that the possibility of this sort of home economics is still with us, on being asked, by those interested in the introduction of the study into the curriculum of one of the leading colleges of the Middle West, whether I could suggest a teacher with this point of view. I was assured that the seeming lack of such was a chief deterrent in the introduction of the work. That that college is not yet provided for makes me fear that the variety is growing too rare. Those of us who were so fortunate as to know Mrs. Richards, and to appreciate her ideals, consider earnestly our obligation to continue the respect which she created for the study, by virtue of her own broad training and interests and the vision she had for the work.

YOUTHFUL HANDIWORK FROM ITALY

Some of the most prized articles in several American homes today are exquisite little vases, boxes, and trays made by the childish fingers of small Italian refugees. These were brought home by American Red Cross workers from that land of beauty and art where even the children were imbued with an understanding of color and design. In spite of the youthfulness of the artisans, much of this handiwork has real artistic merit.

The pottery came from Monteporzio, where the Red Cross had a school for boys whose parents were lost or left behind in the evacuated districts. One of the directors of this school was a student from the American Academy at Rome and under his training many of the boys became quite skillful in decorative work.

In Avellino, novelties in wood were made. Avellino is the center of a wood working district and the boys who worked in the industrial groups of the American Red Cross *asili* turned out some clever carved and painted wooden toys for use in their playground, for which, incidentally, they made all the equipment themselves.

In Venice the children made a specialty of cross stitch work and hand sewing. With their fine sense of color and harmony even the pieces done by the smallest children showed ability and taste in design. One little girl of six made an embroidered square, with the Italian and American flags, joined by the symbol of the Red Cross, in the center, and an embroidered motto across the top, entirely in cross stitch. This bit of work equals in execution the sampler of grandmother's day and is far in advance of any handiwork the average American child of today could make at the same tender age.

The children of this same *asili* made complicated little *lira* cases too, those queer foreign purses, which you turn one way and your *lira* notes are in, and you turn another and they are out! These are made of scraps from the workrooms, and painted or embroidered in attractive designs.

Not only in the schools and *asili* for children were interesting bits of handiwork made. In the workrooms where the American Red Cross gave employment to hundreds of refugee women and untrained wives of soldiers, every scrap of material was utilized. From these left over bits of goods, "hit or miss" rag rugs were knitted or crocheted, and *Friuli* shoes, the soles made entirely from cloth, quilted and pounded, were manufactured.

The greatest service the American Red Cross rendered to the soldiers of Italy was in the care of their children, a care which these impetuous little southern folk will not soon forget. On one July 4th, the boys of Monteporzio held a celebration and exhibition of their work in honor of the Americans, which those who were present will always remember.

One boy, trim in brown uniform and Boy Scout hat, spoke for them all. "Oh, my mother," he finished, "up behind that curtain of blood and fire that separates us, read in the stars of Heaven that beneath other stars, the starry flag of America, your little son has found safety and tender care."

FUTURE ADMINISTRATIVE PROBLEMS IN VOCATIONAL
EDUCATION IN HOME ECONOMICS¹

ANNA E. RICHARDSON

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I wish very briefly to discuss with you some of the problems of the administration of home economics education—the groups of women to be reached by such training, the school's responsibility for providing all the facilities and factors which enter into a complete program of homemaking education, and the need of providing adequately trained vocational teachers. These are problems in which both the federal government and the states are mutually concerned. The national government has assumed its responsibility in the matter of training women for the vocation of homemaking by the inclusion of home economics, along with agriculture and trade and industry, in the Federal Vocational Education Act. The 48 states likewise have assumed responsibility both by their acceptance of the provisions of the act and, on the part of a number of states, by the enactment of further legislation which provides additional state funds to establish schools and classes for homemaking instruction.

After almost three years of work under the act, we find that a good beginning has been made, but that there are many problems involved in the administration of home economics education yet to solve. Have we, as state and federal people, really analyzed our job of administration? Have we carefully studied the needs of the women and girls who should be reached by this instruction, and then planned a program which will meet those needs? We are all tied pretty closely to the school and its point of view. Have we not very generally attempted to formulate a plan for vocational education which will fit into our present school system, rather than a program planned after studying the problem of homemaking in our state and the needs of our girls and women, as we have found them? How shall we set about outlining a program which is truly based upon the needs of our homemakers? Unquestionably the first step is to find out those needs. The homemaking problems facing a mother who has a family to care for are not the same as those with which the girl is concerned who is just now preparing for housekeeping, nor are

¹ Paper read before the meeting of the National Society for Vocational Education, Chicago, February, 1920. Published also in the *Proceedings* of the Society.

they the same for the young woman who is employed outside of the home and yet who keeps house for herself and other members of her family. We can not, therefore, study those needs in general terms, but will find it more satisfactory to study the homemaker's needs in relation to the groups to be reached by homemaking instruction.

All of our girls and women may be roughly divided into three large groups:

(1) The women employed in the occupation of homemaking, either in their own home or for wage earning in some one's else home.

(2) The girls and women employed outside of homes in industrial or commercial occupations.

(3) The girls who are still in school.

Is homemaking training desirable for all of these groups? The whole problem of training women for homemaking is complicated by the fact that more than 80 per cent of our women do eventually go into their own homes and practice homemaking as their chief occupation, and that the majority of the remainder practice some phases of the vocation, even though employed outside of the home in wage-earning occupations.

The women employed in full-time homemaking comprise the largest group needing vocational training, for homemaking is still the occupation into which more persons enter than into any other one occupation. Women enter this vocation with various degrees of skill and efficiency, which must be supplemented by training if they are to carry on the work of the home in such a way that the ideals of our family life are to be preserved and we are to rear a happy, healthy American people.

With the sentiment of the country steadily growing in favor of part-time classes for all workers from 14 to 16 or 18 years of age, and with the passage of compulsory part-time laws in 18 states, we have, through these classes, an opportunity to serve an increasingly large number of girls. Our problem is not so clearly defined for this group of wage earners outside of the home as it is for the women employed in homemaking pursuits. The majority of these girls have little education, general or vocational, and their chief concern is to earn a living. They make up the great group of unskilled labor in factories, mills, and other industrial plants, and their chance for advancement is slight unless opportunity is given to them to add to their meager education. Wherever the employment of these girls is such that part-time trade extension classes can be offered, they should have them. This is an important point for home economics people to clearly see, for sometimes in our enthusiasm we are

apt to feel that every group of factory girls should be given homemaking instruction. Unquestionably there should be homemaking classes for those girls who expect soon to assume homemaking responsibilities, or who wish preparation for wage earning in some homemaking occupation. This group is comparable to the part-time trade preparatory classes which are organized on the basis of a contract of employment; but, for the greater number, who do not expect immediately to assume full homemaking responsibilities, should vocational training be offered? Yes, but not at a sacrifice to their wage-earning opportunities. Obviously the occupation of many of these women is a dual one,—with part of the time spent in homemaking activities, while the greater part of the time is spent in a wage-earning pursuit outside of the home. Should they not nevertheless be eligible for vocational training in home economics? Such women do not practice homemaking in its entirety, but they have some very real problems of food, clothing, and shelter with which to contend, and they need help in solving them.

Educators are practically agreed that the two groups just outlined should be reached by vocational courses in home economics. Concerning the third group, which is made up of girls who are in school, there seems to be considerable variance of opinion. There are those who maintain that there should be no vocational courses in home economics open to normal high school girls, while there are others who feel that all home economics properly taught and rightly chosen is vocational. It has been difficult to see clearly the problems of vocational education in the day school, for the issue has been beclouded by the fact that day school is only now getting its bearing in relation to community needs. It was comparatively simple as long as its chief function was to give general education in schools and pass on as many of the pupils as possible to higher institutions. But now that the question is being asked, What is the school doing for the boys and girls who drop out?—and when first one community interest and then another questions the value of the school and what it is giving in the way of training to fit boys and girls for work, the problem begins to be more clearly defined and the function of the day school in reaching the groups through vocational education becomes more evident.

The girls of over fourteen who are in school divide themselves pretty generally into three groups. First, a large group who are in high school simply because they are sent there. They have little choice and do not much care what course they follow. The future is hazy and they take

little heed of tomorrow. The second group is made up of girls who know that pretty soon they must get to work, and therefore they are anxious to have training which will put them into employment. The third group is made up of those who fully expect to go on through high school and probably on to normal school or college. Should all of these groups be given vocational home economics education? From the standpoint that they are all girls who have some share in the life of the home, and from the fact that the majority of them will eventually have a much larger share, Yes. If, however, vocational home economics courses are to be limited to those girls who expect to go directly into their own homes, then we must exclude from this training the groups who expect to enter other vocations.

Should assurance of immediate placement in the occupation determine whether or not a course is vocational? Or should not rather the avowed aim of the course, and the fact that the instruction offered is chosen to carry out that aim, determine that a course is either vocational or designed for general education training?

Agreeing generally on the groups who should be reached by homemaking training, our next big problem is: How shall we determine the kind of instruction which should be offered? I shall neither have the time nor do I wish to discuss courses of study, but I do wish to point out a few guide posts in determining the choice of the instruction material in a vocational program. The many queries indicate that our choice of subject matter is still largely dominated by the ideals of general education. We have not clearly enough in mind the demands of the vocation and the necessity for these demands dominating our training, if we are really to offer vocational education which will get results.

The homemaking needs are not identical for the three groups as set up above, and the choice of subject matter taught should not be the same for all groups. Homemaking, as has been said, is a composite occupation. The modern home is much less a production plant than it was, yet the home is and will continue to be concerned with productive jobs; and the woman is, therefore, a worker in the several semi-skilled occupations which are practiced in the home. In addition, the homemaker's job is a management job. She is largely responsible for the buying of supplies, the planning of the work in the home, and the management of the family life. No two homes offer quite the same conditions and the management and work jobs vary with the income, size of family, location of home, and the native talent and ability of the homemaker. For one

homemaker the job is largely that of a worker in the various occupations that make up the life in the home; for another it is largely that of a manager of a business enterprise; for the majority it combines both elements.

Recognizing that homemaking is a composite vocation made up of several fairly clearly defined occupations which are frequently practiced independently, shall we not arrive more quickly at our determination of the kinds of instruction to offer if we analyze each of the occupations separately, and from such analyses determine the occupational needs and the content of instruction? We can not hope to deal satisfactorily with these problems wholesale, but there are common occupations which form, in varying degrees, a part of practically all homemakers' jobs, and the training which is needed for the several groups differs mainly in the extent to which these occupations form a part of homemaking for each group.

For the group employed in homemaking activities the instruction offered should do three things. First, it must offer opportunity to learn simple processes as they are carried on in the home; second, it must supplement any skill which the home worker already possesses and increase her ability to do the work of the home; and third, it must develop an understanding and appreciation of what the job as a whole means, develop managerial ability and appreciation for the finer and more spiritual and aesthetic side of homemaking. The extent to which these three aims of instruction can be carried out will depend upon the ability, general education, and training of the women.

In planning instruction for this group it must be remembered that at most, the homemaker will come for only short unit courses offered two or three times a week, so that the opportunities are necessarily limited and the instruction material will have to be chosen carefully. Theoretical education will have little place. Text books and courses of study which deal with general phases of homemaking should be discarded. The woman needs specific help to do her job. To illustrate—a theory of budget making availeth nothing. Her problem is to feed, clothe, house, and provide education and recreation for a family of five on \$1500. It is a definite problem, and if you are to help her you must deal with it. She keeps house in a city apartment; the problems of house construction, heating, proper arrangement of rooms so as to secure southern exposure for nursery or living room, mean little to her. She needs to know how she can provide adequate heat, air, and sunshine for the baby in a three-room apartment on the north side of the house.

Neither must we rest content with merely *offering* courses; we must see to it that the women are reached, interested, and attracted to come for instruction. This is not an easy job; it is the hardest that we have. We have so little machinery, no compulsory attendance laws, no hope of advancement in wages for most of those who come—nothing to bring them, unless we have something to give which they want. In teaching such groups the teacher and the content of instruction are both on trial, as the class is made up of rather discriminating critics. But it is worth all the effort we can put forth. Remember we do not dare to neglect the home; for every day the child, the hope of tomorrow, goes forth what he is, because of that home. With about twenty million women to reach through short courses, we can not feel that we have a really national vocational program until a large proportion of them are reached.

The instruction in homemaking offered for the group of girls who are employed outside of their homes should be based upon their immediate needs. We must commence our training of this girl where we find her and build upon her own homemaking interests, which for the most part center around her clothes, her looks, her budget for living on \$15 a week, and her food. She is interested not so much in problems of construction of clothing, but in its choice, renovation, and care. As these girls are in school for from six to eight hours a week and many of them for more than a year, systematic instruction should be offered which will teach fundamental homemaking processes, as well as the essential related instruction and general education which will make them intelligent workers either in their own homes or in occupations outside of the home.

The aim of the instruction in home economics given to the girls in school will vary, as was pointed out earlier, with the different groups of girls found in school. For the girl who has made her choice of homemaking either to be followed in her own home or as a basis for wage earning in some one of the occupations practiced in the home, the course should be organized as a homemaking preparatory course, for it seems only sound to judge a vocational course on the basis of aim, content, and avowed choice of the student.

Is home economics as given to all girls of over 14 years of age vocational, or is it to be accepted as a part of their general education? I am ready to grant that it is vocational, but for what vocation is it designed? The vocation of house daughter? Is it taught primarily from the point of view of training the homemaker, or is its avowed aim to train a girl for her share in the life of the family? I can not settle this problem, but I

think it is one that as administrators we must squarely face. If we are to offer a vocational course for a house daughter, let us recognize it as such and carefully study the problem as to how best to train the girl for her immediate needs as a member of her family and as a worker in her mother's home. Let us determine the amount and kind of homemaking instruction necessary to make of her a good house daughter. If, on the other hand, we are training her to be a homemaker, let us agree to this and set to work to analyze the homemaker's job and base our instruction on this analysis.

We have never satisfactorily determined what the instructional content of our homemaking course shall be. We have never made a thorough-going study of the successful homemaker and the elements of her success. I agree that we have based our instruction upon home practice and that the best home usage has been our guide, but we have not made a very careful study of the contributing agencies that make for successful homemaking, nor have we formulated these into homemaking courses. Have we determined the processes involved in the occupation of homemaking and have we classified these processes in the order of their learning difficulties?

We have been offering good home economics courses, but have we been offering a course designed to train our young people to be homemakers? Do we know the amount of time necessary to train a girl in the fundamental operations of the work of the home and at the same time give her sufficient related instruction to make of her an intelligent, independent worker? Have we agreed upon whether the length of the homemaking course should be six months, or one or two years? Should it be offered 90 minutes a day, or for two and one-half or three hours? Shall we devote part of our half day to related subjects; and if so, what shall we teach? Shall we require supervised home project work of all girls taking vocational work in home economics? It is impossible to teach all of the vocation of homemaking to the girl in school. We can not hope that the day school will turn out a 100 per cent product, therefore we must needs decide the amount of skill, managerial ability, scientific and artistic appreciation which should be given as a part of our homemaking training.

The third problem which we, as administrators, face is that of providing adequately trained teachers. In vocational education, even more than in general education, the success of the work will depend upon the teacher. The institutions of the country are each year graduating

girls well trained in the scientific aspects of home economics, but are we training many good teachers of homemaking? Furthermore, the chief interest and concern of the institutions has been to train the teacher for the all-day school. As we have earlier pointed out, this is only a small part of the problem of homemaking teaching, for the great group of our people are yet to be reached through evening schools and short courses.

A number of the states have gone after this problem with some seriousness. Particularly is this true of Massachusetts, New York, and California. In the main, the recruits for these teacher-training classes have been women with trade experience or housekeeping experience. The young, inexperienced girl has been barred. The trade-trained woman has proved to be a teacher very successful in dealing with the practical housewife enrolled in the short unit courses, for she has to deal only with the phase of homemaking which she knows from long experience. This is particularly true in millinery or dressmaking, where the trade standard is the desired standard for all garments made. These potential teachers have training and vocational experience, and the further need is to give them the type of pedagogy which will enable them to put over their knowledge to their students.

Ideally our short course teachers should be picked by hand, for the successful teacher must not only know her subject and how to teach it, but she must know her students and their needs. She must know the general home standards of her class and be in full sympathy with its problems. For this reason the trade teacher does not always successfully teach the care, renovation, and remodeling, of clothing with the success of the woman who has worked more nearly under home conditions. Great care has to be taken in choosing women who can successfully work with the foreign-born woman. To reach her you must know her standards of life in her native country and her social and religious prejudices, which have to be reckoned with. Tact and sympathy on the part of the teacher will go far in arriving at the real needs of the foreign-born woman and in determining how best to help her.

I have attempted to show that the big problem before us, both as federal and state administrators, is the working out of a real program for vocational education in home economics, based upon a study of the needs as revealed in the analysis of the homemaking occupation as it is practiced by the various groups; that we have been too apt to follow

the well-beaten path as marked out for general education, rather than to strike out and determine content and method for vocational courses; and that the great challenge to us is to reach with vocational education the large group of girls and women who are out of school, as well as the small group who are in school.

There has recently been introduced into Congress at the earnest request of the American Home Economics Association and the General Federation of Women's Clubs a bill to further extend the opportunities for homemaking training. This bill proposes to: (1) remove home economics from that section in the law where it is now included with trade and industry. In this way standards may be set up for home economics which are more nearly suited to the needs and conditions of the vocation of homemaking. (2) To appropriate additional funds for homemaking education. In the present act the fund available for home economics is 20 per cent, or one-fifth of the trade and industries fund. (3) To appropriate the fund on the basis of total population; the present fund which may be used for home economics is apportioned to the states on the basis of the urban population. As 31 of the states have a larger rural than urban population, and as the need for homemaking training is as great in rural as in urban centers, a more equitable adjustment of these funds will come from an apportionment on the basis of total population.

This legislation offers increased vocational opportunities for training women. With this legislation pending it is imperative that we stop and think of some of these problems that are before us. Are we making the most of our opportunities? Have we a real program for vocational education in home economics which can be supported and pushed by the states and the national government?

PRACTICE HOUSES A REALITY

DOROTHEA BEACH

University of Maine

In order to help formulate plans for a Practice House at the University of Maine, a questionnaire was sent out in January, 1919, to seventy-six institutions, including thirty-five state colleges and universities, twenty-one colleges, thirteen state normal schools and state teachers' colleges, and seven institutes. The information desired was asked for in the following form:

1. Have you a practice house? (a) Owned by whom? (b) How many rooms?

2. How many girls work at once in the practice house? (a) What length of time does each group work? (b) Do girls live in the practice house while working there? (c) Are other studies carried on while students work in the practice house?

3. How many instructors superintend work in the practice house? (a) Do they reside there? (b) Do they do any other teaching? (c) Do they pay for their board and room?

4. Is work in the practice house required or given as an elective? (a) Is the work given in junior or senior year? (b) How large is the junior or senior class? (c) How many credit hours are given for practical work? (d) How many credit hours of work do students carry with their practical work?

5. How are the expenses of the practice house met?

6. What was the cost of furnishing the practice house?

7. What are the annual expenses? (a) Total? (b) Per capita?

8. What division of the work of the house is made?

The following questions should have been added to those above, since answers to them have been desired as plans for this house matured.

What were your practice house expenses for the school year 1917-1918? (a) Rent paid (or estimated)? (b) Cost of heat? (c) Cost of light? (d) Cost of food? Classify other expenses.

Sixty-one institutions answered the questionnaire. Of this number, thirty-two had a practice house and twenty-nine had not. Of the thirty-two, nineteen were state colleges and universities; four were colleges; six were normal schools; and three were institutes. Of the twenty-nine not having a practice house, eleven were state colleges and universities; twelve were colleges; three were normal schools; and three were institutes.

SUMMARY

State universities and colleges. Eleven houses are owned by the institution and eight are rented. The rooms number from five to fourteen with an average of eight.

The number of girls working at once in the house is from two to eighteen, and averages seven. The length of time which each group works ranges from five days to eighteen weeks, averaging about seven weeks. In each institution the girls live in the practice house while working there and carry on other regular courses. In fourteen institutions, one instructor superintends the work and in the others, two. These instructors reside in the house, nine paying for board and room, five for board only, and four paying neither board nor room. In every instance but one the instructor does other teaching which usually includes household management. No conclusion can be drawn as to the relative amount of time given by the instructor to the practice house or to other teaching.

Work in the practice house is elective in three institutions, required of Smith-Hughes students in four, required of seniors in eight institutions, required of both juniors and seniors in three; and in one institution, where the number of students is small, required during all four years. In the institutions requiring the work of juniors or seniors, the number of students in this course ranges from sixteen to seventy. Credit given varies from no credit to six semester hours. With their practical work these students carry from eleven to twenty hours, averaging sixteen.

Of the nineteen state colleges and universities, two and possibly three of the practice houses are self-supporting.

The majority of those not self-supporting have rent and heat furnished by the institution.

The reports on the cost of furnishing are, in the majority of cases, too inaccurate to be of any value. The two self-supporting practice houses gave, respectively, \$5.90 and \$4.50 per person per week for expenses; the former was in the northwest and the latter in the south. Only five other houses gave an average cost of food per person per day and this varied from thirty to fifty cents. Of the nineteen institutions, six were just opening a practice house. The division of work varies so greatly that it is impossible to summarize it satisfactorily. In general, it is as follows: housekeeper and hostess, cook, assistant cook, waitress, and general housemaid. It is so arranged that every girl has an opportunity to do each type of work.

Normal schools. Of the six normal schools reporting, four own the house. The average number of rooms is nine. The number of girls working at once in the house ranges from five to twelve, averaging seven. The length of time during which each works ranges from two to twelve weeks, averaging eight weeks. The girls live in the practice house while working there and carry on other regular courses. In each case, one instructor lives in the house and superintends the work. Four instructors pay board and room, one pays board only, and one pays nothing. All but one carry other teaching work.

In every case the work is required of home economics seniors. The number of seniors ranges from ten to two hundred and fifty and averages twenty, except in the one large institution. The credit given ranges from no credit to four units. Full work is carried in each place, with the practical work. Two schools are self-supporting.

The cost of furnishing, and the running expenses given are too indefinite to be of value. The division of work is the same as in state colleges and universities.

Colleges and Institutes. The data received from these varies so greatly that a summary is impossible.

UNIVERSITY OF MAINE

The practice house at the University of Maine was opened on September 8, 1919.

The house, which is known as North Hall, is on the university campus, and is about one mile and a half from the village of Orono. It is a typical, old, rambling Maine house, which faces west and overlooks the Stillwater River. It was built almost one hundred years ago and was the farm house on one of the two farms which the towns of Orono and Old Town bought and gave to the State in 1866 for the Campus of the University of Maine. Since that time, the house has been used as a professor's residence, a fraternity house, and, for one year, as a temporary girls' dormitory. Few changes have been made in the house, although it has been moved from its original site.

On the first floor there are double living rooms with seven large recessed windows through which the sun streams all day long. In the rear of the large front hall, which is thirty feet long, are the housekeeper's desk and files, and the family telephone. Back of these, running across the house, is a huge dining room with a fireplace at one end and French

doors opening on a piazza. Then there are the serving room, back hall and stairs, and kitchen. Opening off the kitchen are the supply pantry, with built-in ice box, and laundry. Back of these are a tool room, trunk room, and shed. There are nine bedrooms and a bath room on the second floor and in the attic there is one large room.

The front living room is furnished with wicker chairs upholstered in tapestry, a small walnut table, and a piano, which the three upper classes of the Home Economics Department are buying for the house. The back living room and dining room are furnished in fumed oak. The color scheme in the living rooms is brown and blue, which is carried out in the rugs, tapestries, and portieres. The entire house has hard wood floors, white painted woodwork, and simple white curtains at the windows. The dining room, kitchen, laundry, and cleaning closet are furnished with all labor-saving devices which are practical for the average family, such as oil stove, fireless cooker, vacuum cleaner, electric iron. Special care has been taken in planning the kitchen so that the work may be done quickly and easily.

In every bedroom there is a desk, and for each person a bed, chiffonier, straight chair and rocking chair. Each member of the family must provide her own rugs, curtains, bedding, and towels, as is done in the dormitories. The furnishings of the house, which are practically completed, cost \$2691.45.

The four home economics instructors live in the house with the seven senior girls. These people, with one woman who supplements the work done by the girls, constitute the family. The house is rented by this family from the University. The house is self-supporting, paying rent, heat, light, water, telephone, laundry, help, food, and incidentals.

Four girls are doing the work for this semester and three will do it the second half of the year. All the girls live in the house during the whole year. This course in household administration is required of all seniors in home economics and three credit hours are given for the work. The other credit hours carried vary from fourteen to sixteen. One instructor superintends the work, giving about one-third of her teaching time to it.

The family runs on a cooperative basis, each member paying the same board and room rent that is charged in the university dormitories. At the close of the college year an itemized cost of furnishings and running expenses will be made.

Every girl holds each of the following positions for about one month: the housekeeper, who plans the meals, does all the buying, pays the bills and keeps the accounts; the cook, who is responsible for all the meals from Monday morning through Saturday noon; the assistant cook, who helps the cook prepare the meals and wash the dinner dishes; the general maid, who sets the table, waits on table as a member of the family, and does cleaning. The woman who supplements the work of the girls, washes the breakfast and luncheon dishes, is responsible for preparing the meals from Saturday noon to Sunday night, and does the remainder of the cleaning. Each student keeps her own room in order.

The house has no rules and regulations other than those which are under student government. The life of the house is that of a large family with all its freedom and varied interests. Current magazines, music, growing flowers, and a daily paper add much to the home life. Each member of the family is free to invite guests whenever she chooses, and birthdays and holidays are made occasions of family parties. The Home Economics Club holds its monthly meetings here.

A HOSPITAL HEALTH CLINIC

GWENDOLYN STANTON HUBBARD

Visiting Dietitian, The Children's Hospital, Philadelphia

Nutrition clinic work is still in the pioneer stage, although fortunately it has not had to struggle against so much opposition as many new projects, for each year the world grows more human and devotes more time and money to the development and education of youth. Until a few years ago doctors centered their efforts upon the removal of physical and mental defects by means of surgery, but now they realize more and more the effect of diet and hygiene in youth's development.

The undernourished child is found in appalling numbers now that attention has been focused on this subject. Ignorance is more to blame than poverty in most cases, and the interest of the mothers, and of the school authorities must be gained as well as that of the medical profession. If the coöperation of these three is obtained, slowly but steadily the malnourishment of children will be lessened, and those little ones who are entering the world will have a fair start in life.

The Children's Hospital of Philadelphia has established a health clinic that has a wider scope and a larger field than is covered by most nutrition clinics. It is not only interested in bringing the undernourished child up to par, but it feels the responsibility of keeping well the children living in its neighborhood.

The preventive work of training children in proper living and eating has progressed steadily until now after four years the clinic has enrolled three hundred children between the ages of four weeks and twelve years. Many of them, after having been cured in the wards and dispensary, have been referred to the health clinic in order that they may keep strong. Frequently mothers bring in their children and remark that they have heard of the "Healthy Clinic" and they want to know what and how to feed their babies to keep them well.

No discrimination is made regarding color, nationality, creed, or financial standing, although most of the children belong to the poorer sections of the city. The clinic might almost be called a school of Americanization, for little dark-eyed Angelina Poccini is encouraged to want oatmeal, lima beans, spinach, and potatoes, like her American sisters, instead of a daily diet of macaroni *a l'Italienne*, and some desire for cleanliness and thrift is instilled into our many negro boys and girls. Each child on admittance to the class is given a thorough physical examination to determine any defects, and his weight chart per age, per height, is made out. Enlarged tonsils, adenoids, and carious teeth seem to be the most numerous defects. The first effort is to correct these, for they are heavy burdens preventing the child from mounting the hill of health. The dietitian talks to the child and his mother in the hope of finding some rule of health which is already being carried out. Upon this foundation she builds the rules of health and enlarges the structure as the child's interest increases. One little Italian chap was dirty from head to foot; he drank coffee, and played around the streets until late hours, but his teeth were in excellent condition, large and white, the kind that might have pleased any dentist. When the dietitian talked to him of how much whiter and prettier they would look if matched by a clean, rosy face, she "got it across," and his present condition is remarkable.

If the mother, herself, does not bring the child into the clinic, the dietitian visits the home, provided it is in the ward in which the hospital is located; if not, she writes instructions to the mother and asks her to bring the children to the next clinic. Home instruction supplements that given in the hospital when possible, and is of inestimable

value, for the children do not very often introduce the subject of health rules at home, unless they feel that their mothers will be truly interested and will pull with them.

The children whose weight charts show signs of progress each visit come once a month. When the red line of actual weight runs down hill away from the blue line of normal weight, the child comes more frequently. A detailed study is made of his condition from week to week and his interest in his progress is enhanced by a small book in which he records everything he eats for a week, or again, when his efforts seem deserving, he receives a gold star on the Honor Roll.

An average of twenty-five attend the Monday clinic, which is devoted to children from a few weeks to six years old. About two o'clock they begin coming and the nurse is kept busy weighing the babies, taking their height, and recording their progress on the medical charts. The dietitian then brings the weight charts up to date; she shows them to the mothers and talks with each one individually—to Mrs. Brown, to find the cause of Jimmy's loss of one pound in two weeks, perhaps due to a ten o'clock bed rule, in spite of the fact that 7:30 had been set as the latest hour; to Mrs. D'Amato, whose Mary had progressed rapidly and gained two pounds in a month since her tonsils were removed. At 2:45 everyone moves up to the health clinic room where the dietitian demonstrates some simple principle of cookery. The mothers and children taste the Home Defense pudding, oatmeal, milk vegetable soup, or whatever is prepared that day; they discuss the price, and take the recipe home for future use. Each week the dietitian emphasizes a special subject. On the day cream spinach soup was prepared, she stressed the importance of vegetables in the diet, the function they fill, the different ways of preparing them and the relative cost. The doctor examines each child and, assisted by the information he receives from the dietitian as each case is brought up, he gives individual directions for each one. This is recorded on the medical chart. Pamphlets on the lesson of the day are often given to the mothers to read while they are waiting to see the doctor, or they examine the food and health posters which are hung about the room.

Wednesday is by far the busier day. The children from six to twelve years old come earlier, some by 1:30, impatient to see their weight charts; for they want to grow healthy and strong. The dietitian talks individually with each one as she did with the mothers. She questions them about their meals, bed hour, baths, tooth-brushing, and all the

little things which, when performed, tend to make healthy boys and girls, and, when neglected, to make sickly ones. At 2:45 there is a rush of about thirty children up to the "health room." Each child is eager to see his weight chart hung on the health line and to count the number of stars he has on the Honor Roll. On one end of the line are many charts, on the other few. The many represent the gainers in weight, the few the losers. Frequently one of the children comes up and almost wistfully asks, "Do you think I'll get a star, Mrs. ———? I drank my milk and had oatmeal every morning and I've gained eight ounces in one week."

School holds our attention for the next half hour. If anyone is fortunate enough to have four stars on the Honor Roll, a prize is given and the child comes up in front of the class to tell everyone all the things he has done to gain those stars. One day we may play "The Race to Health." On the blackboard is drawn a series of steps mounting to the goal called health. Each child tells one way to climb and the dietitian writes in each step a suggestion. Early to bed, windows open top and bottom, drinking milk and cocoa, oatmeal every day—these suggestions with many others fill the many steps. One favorite amusement of the children is to learn health poems. Wouldn't you want to brush your teeth twice a day, if you could learn the poem called "Johnny Brushing-Game?" This is one they learn, afterward raising their hands to show how many of the children are actually keeping the rule.

JOHNNY BRUSHING-GAME

If you do not brush your teeth,
Every pleasant day,
When you come to be grown-up
All the folks will say:

"Bad, black teeth,
O, what a shame!
I don't want to know *your* name!"

If you do not brush your teeth,
Every rainy morn,
Some day folks will look at you
With an *ouful* scorn.

Bad, black teeth,
O, what a shame!
Folks won't want to know *your* name!

If you always brush your teeth,
Whate'er the weather be,
Everyone will smile, and say,
"Who is this I see

With nice, white teeth?
I know your name,
You are *Johnny Brushing-Game!*"

Before the children go the doctor examines and prescribes for each one, and the case is recorded on the medical chart.

While the health clinic is one very important phase of the work, it must go hand in hand with the follow-up work in the home. One can make a general classification of the mothers—the coöperative, who really work to get results and who welcome any suggestions; those who indifferently shrug their shoulders and say they do not care, the children can come to the clinic if they want to, they can stay up late or go to bed early, it is entirely up to the child; and those who admit, frequently with a certain degree of pride, that their children are the bosses. They seem to have no control. Their children do just as they please and in every case they show the result of their lack of training. Each mother has to be handled differently and with an endless amount of tact.

In some homes the visit is a friendly call and the dietitian is welcomed as a neighbor from across the way. The mother discusses with her the proper diet for the family and ways of preparing cheap, nourishing, and attractive dishes. When there is no coal stove, the visitor may show the mother how to make a fireless cooker, or if there is a two burner gas stove, she may help in the construction of a seventy-five cent gas oven. If the mother does not know how to cook the food advised, a cooking lesson takes place in the home or perhaps the noon-day meal is prepared. When malnutrition is evidently due chiefly to ignorance, and the mother does not know about cheap cuts of meat, meat substitutes, and how to make out her weekly food budget, the two talk over the taste of the family and the money they may spend and, never forgetting these two points, plan simple, nourishing meals.

Then come the families where there is a distinct social problem. When the dietitian has gained the confidence of both parents, she tries to help them and to guide them wisely. Home happiness, hygienic living, and proper and sufficient food are so closely interwoven that health depends on each factor to make it supreme.

Every institution has plans for the future; each clinic has its dreams of how it will extend upward and outward. Some day we hope to have a diet kitchen where cooking classes for the mothers and children may be held. Some day we want a small model house where the children can learn through actual experience the ways of healthy living and eating. Yet our plans are not alone for the development of the work in our hospital; we want every hospital to establish health clinics and we want the work introduced into every school so that diet and hygienic living may fill as important a place in the curriculum as the three R's.

THE "SCIENCE" OF CONSUMPTION

FAITH M. MCAULEY

The University of Chicago

For years careful study has been given to the problems of production. The Department of Agriculture through its various bureaus and through the state experiment stations has made scientific agriculture and allied fields a special problem. All the primary industries have been fostered and have developed with unparalleled rapidity in the last fifty years.

Not only production but distribution as well has been made the subject of study. The distribution of our food products is as highly specialized as is their production. The separation of producer and consumer is an economic separation as well as a geographic one. A complex market organization has been developed requiring the services of specialists. The complexity of the distributive machinery required is evident from an inspection of a partial list of food products noted on the Chicago market in February: winter caught trout from the Canadian lakes, strawberries from Florida, tomatoes from Mexico, celery from California, pineapples from Cuba, bananas from Venezuela, Black Hamburg grapes from Belgium, Valencia onions from Spain, nectarines from South Africa. Only a small per cent of Chicago's 3,000,000 eat South African nectarines for breakfast, to be sure, but the market machinery making it possible to do so is in operation. The work is truly at our door. Courses in salesmanship, and courses in the psychology of advertising offer training in the art of creating demand, the stock to supply which is awaiting a "consumer."

And what of the consumer? He has been in the main a vital but passive factor in economic activity; his principal function, in terms of "the trade" has been "to be sold." Certain measures intended to safeguard his exploitation have been enacted, as, for example, the Federal Meat Inspection Act of 1891, and the Food and Drug Act of 1906. The work of the Bureau of Standards and more recently that of the Bureau of Markets has done much to protect the consumer's interests. To be sure, the average consumer knows little or nothing of these efforts or their bearing on his food problem. Daniel Webster might well have been speaking of the food problem and the consumer when he said, "From the inattention of the people to the concerns of the government, from their carelessness and negligence, I confess I do apprehend some dan-

ger. . . . Make them intelligent and they will be vigilant, give them the means of detecting the wrong and they will apply the remedy."

Ignorance has long been known to be costly. The consumer, who stands convicted of glaring ignorance in matters of vital importance to himself, would seem to find his only safeguard in larger intelligence. The educational system, regarded as the cause of most social ills, is nevertheless looked to for the correction of these same ills. The education of women as a specific problem has not as yet been squarely faced. The present educational trend seems to promise much for the future. Courses intended to furnish the scientific information necessary as a background for the individual in making his social adjustments are being offered in the colleges and universities. A revaluation is being made, and it seems certain that much of the earlier educational material will be discarded to be replaced by new, the relation of which to vital needs is clear. "In that day" the bearing of the Food and Drug Act, for example, on commercial products purchased daily by every consumer may be classed as educational material of a rank equal to ————. Let the reader fill in the blank to his own satisfaction; comparisons are odious.

INTENTION STREET

Intention Street is a broad highway,
And those who follow it, so they say,
Go down and up and up and down,
Trying to get to Nowhere Town.

Nowhere Town is a station fair
On a railway that's always in the air;
None of its trains is scheduled "through;"
Stop-over tickets will always do.

Attention Street is narrow, quite,
And its dwellers work with all their might;
They feed the sick, the poor they pity,
And finally they get to Somewhere City.

—*Winifred Stuart Gibbs, in Life, Sept. 18, 1919.*

FOR THE HOMEMAKER

A MINIMUM FOOD ALLOWANCE AND A BASIC FOOD ORDER

LUCY H. GILLET

Director, Dietetic Bureau, League for Preventive Work, Boston

One market order or one food allowance to suit all conditions is obviously impossible. It is quite possible, however, to have at hand the minimum below which it is not safe to go but which may be safely added to as money will permit or as taste demands. The minimum allowance should be what a family cannot afford to go without. At the same time it must be workable from the standpoint of the preparation of meals and some concession must also be made to the taste of the family.

In estimating a minimum but adequate food allowance or in planning a market order the question of health is fundamental. The needs of the body, so far as known, must be met by the suggestions given, but in making suggestions for families of different sizes it is too laborious a task to figure out the needs of the body in terms of proteins, mineral elements, and energy. The suggestion that it is possible to have well balanced meals by planning in terms of types of foods rather than in terms of food values is invaluable when planning for a large number of families. The calculation of the amount of the different types of foods necessary for health (based on the most reliable information available) is perhaps the simplest method of arriving at a minimum food order. The minimum food allowance may be calculated from the minimum food order in which the most economical foods are used.

Take, for example, the well-known statistical family of five, consisting of two adults (man and woman) and three children under 14 years of age. Not knowing what they can afford, the most we can do in suggesting a minimum food allowance for them is to state (in so far as we know it) the least they should have of milk, vegetables, fruit, grain products, and fats. This minimum may be added to by the average woman with much less harm than the allowance slightly above the minimum may be reduced.

Milk. Following the general rule of a quart of milk a day for all children under three and a pint of milk for children from 3 to 6 or 7, with a third of a quart for each of the other members of the family, the least amount of milk this family should have is two quarts a day. One child under three will increase the amount to at least two and a half quarts a day. This amount may be safely and wisely increased to three or four or five quarts as needed.

Vegetables. The more recent knowledge with regard to vitamins leads us to suggest, for the sake of safety, two vegetables in the diet each day, one of which will ordinarily be potatoes. Because of no definite knowledge of the amount of vitamins necessary it seems desirable to have some green or leafy vegetable at least two or three times a week with a root vegetable on the remaining four or five days. Allowing from $1\frac{1}{2}$ to 2 pounds of potatoes a day and from 1 to $1\frac{1}{2}$ pounds of other vegetables, this family of five will then require from 10 to 15 pounds of potatoes, from 5 to 7 pounds of root vegetables, and from 2 to 4 pounds of green vegetables per week.

Fruit. While fruit was formerly thought to be a luxury the function of which was to stimulate a sluggish appetite, we now know that it is considered an essential part of even an economical diet. Fresh fruit for the younger children four or five times a week is considered advisable but when the strictest economy is necessary fresh fruit for the whole family is possible only when fruit is cheap. When fresh fruit is over 4 or 5 cents a pound dried fruit may be substituted for the adults. In such cases the amount of milk and vegetables should be increased.

Meat products. The Interallied Scientific Commission, formed during the war, stated that it is impossible to give a minimum amount of meat necessary because meat is not a physiological necessity. With economy as the watchword neither can meat occupy a very prominent part in the diet. Nevertheless, it seems advisable from the psychological standpoint even in a minimum food order to satisfy the appetite of the adults by including some meat. This amount should be reduced to the least amount that seems workable. It has been found by experience that seven substantial and satisfying dinners may be prepared from 5 to 7 pounds of meat and fish, supplemented with one-half pound of cheese and one and one-half pounds of dry beans or peas. These foods not only provide the foundation for seven dinners but with even two quarts of milk a day they also provide an adequate amount of protein. Young children may need eggs, in which case they should be

added to or substituted for a part of the above. The suppers will necessarily consist of combinations of milk, vegetables, bread, cereals, and fruits.

Fat. Fat should be planned, not so much from the older point of view in which the amount of fat necessary was determined by convenience in cooking, but rather from the standpoint of the health of the family. The minimum amount specified by scientists as necessary for adults is two and one-half to three and one-half ounces a day. This family of five which is equivalent to 3.3 adults will therefore require at least three and one-half pounds of fat a week. As the children may need more than the adults in proportion to size it seems safer to allow four pounds as a minimum. Two quarts of milk a day for a week will provide one pound of fat, leaving three pounds of fat to be purchased as such. Any amount of fat obtained from meat and other foods will provide a margin of safety.

Grain products. Grain products are generally recognized as the cheapest source of energy and occupy a prominent place in an economical diet. In addition to the foods already mentioned grain products and sugar must be provided in sufficient amounts to bring the energy up to the requirement of the family. As sugar should not be relied upon to any great extent, especially in a minimum diet, the bulk of the energy will have to be provided by grain products. About 25 pounds of bread and cereals (including rice and macaroni) have been found to meet the weekly requirement. If the bread is made at home, this amount may be reduced to about 20 pounds. It has been found possible to use in various ways from 10 to 12 pounds of cereals in the diet of a family of five. The remainder then may be used in the form of bread, or more bread and less cereal may be used if desired.

Sugar. Sugar like meat is not necessary from the standpoint of physiology. As with the meat, however, it seems advisable to satisfy the usual conception of a good diet by adding the minimum amount that seems to serve the purpose of sweetening foods. Experience has shown that the sugar may be reduced, reduced because it usually occupies too prominent a place in the cheaper diet, to two or three pounds a week for the family. One pint of molasses makes a valuable addition, not only because of the energy but because of the mineral elements which are thereby introduced.

Worked out on the above suggestions a minimum order for a week for a family of five (2 adults and 3 children) may be given as follows:

Milk.....	14	quarts
Cheese or peanut butter.....	$\frac{1}{2}$	pound
Meat or fish, fresh.....	5-6	pounds
Fish, dried or salt or smoked.....	$\frac{1}{2}$	pound
Beans or peas, dried.....	1 $\frac{1}{2}$	pounds
Eggs.....	$\frac{1}{2}$	dozen
Potatoes.....	1	peck
Onions, carrots, beets, turnips, parsnips, cabbage, string beans, spinach, etc.....	7-9	pounds
Prunes, raisins, or other dried fruits.....	2	pounds
Fresh fruit.....	3-5	pounds
Bread, or more bread and less cereal.....	14	pounds
	or	
Flour.....	10	pounds
Cornmeal, rice, hominy, samp, barley, macaroni, oatmeal, or extra flour.....	10-12	pounds
Sugar.....	2	pounds
Molasses.....	1	pint
Fat, butter, butter substitute, lard, oil.....	3	pounds
Cocoa, tea, and coffee.....	1	pound

The above food order provides 3400 Calories per man per day with 100 grams of protein, 1 gram of calcium, 2 grams of phosphorus and 16 milligrams of iron to every 3400 Calories. These figures compare favorably with the standard allowances suggested by Sherman which are 75 grams of protein, 0.67 gram of calcium, 1.4 grams of phosphorus, and 15 milligrams of iron.

As has been stated, the above diet is considered a minimum. There is no reason why the food value should be increased but an increase in cost will make it much more attractive by allowing a wider range of foods. It is very simple and easy to vary the food to suit a more liberal allowance, without materially altering the food value. As economy becomes less of a factor, the grain products will doubtless be reduced to offset the energy supplied in other forms such as cream, bacon, or more butter. Butter may well replace all butter substitutes. The more expensive vegetables may replace the cheaper ones while more fruit and green vegetables are desirable, both from the standpoint of nutrition and from the standpoint of flavor. The more expensive cuts of meat while adding no more food value will increase the cost rapidly.

The following table, which summarizes needs in terms of foods, may be used as the basis for making food orders for families of different sizes.

Family food needs

KIND OF FOOD	QUANTITY PER AGE PER DAY	ESTIMATES FOR A FAMILY OF FIVE
Milk.....	Under 2 yrs., 1 qt. From 2-6 yrs., $\frac{1}{2}$ qt. For each three people over 6 yrs. of age, 1 qt.	2 to 5 qts. a day
Vegetables, pota- toes.....	Under 2 yrs., 1 to 2 oz. From 2 to 6 yrs., 4 to 6 oz. From 6 to 10 yrs., 6 to 12 oz. Over 10 yrs., 6 to 12 oz.	$1\frac{1}{2}$ to 2 lbs. a day 10 to 15 lbs. a week
Root vegetables..	Under 2 yrs., less than 1 oz. From 2 to 6 yrs., 1 to 2 oz. From 6 to 10 yrs., 2 to 4 oz. Over 10 yrs., 4 to 8 oz.	1 to $1\frac{1}{2}$ lbs. 5 to 7 lbs. a week (4 or 5 days $\frac{1}{2}$ week)
Leafy vegetables.	Under 2 yrs., $\frac{1}{2}$ oz. From 2 to 6 yrs., 1 to 2 oz. From 6 to 10 yrs., 2 to 3 oz. From 10 up, 2 to 4 oz.	$\frac{1}{2}$ to $\frac{3}{4}$ lbs. a day 2 to 3 lbs. a week (2 or 3 days a week)
Fruit.....	Under 5 yrs., fresh fruit at least 4 or 5 times a week For older people, amount depending on economy and amount of milk and vege- tables used	As much as can be af- forded
Grain products...	Under 2 yrs., 1 to 3 oz. From 2 to 6 yrs., 2 to 5 oz. From 6 to 10 yrs., 6 to 10 oz. Over 10 yrs., 8 to 16 oz.	3 to 4 lbs. a day 20 to 25 lbs. a week (10 to 14 lbs. bread)
Fats.....	Under 2 yrs., 0.5 oz. From 2 to 6 yrs., 0.5 to 1 oz. From 6 to 10 yrs., 1 to 2 oz. Over 10 yrs., 2 to 3 oz. or more	$\frac{1}{2}$ lb. a day $3\frac{1}{2}$ lbs. a week
Sugar.....	Under 2 yrs., not over $\frac{1}{2}$ oz. From 2 to 6 yrs., not over 1 oz. Over 6 yrs., not over 2 oz.	2 to 3 lbs. a week
Meat (no meat needed).....	Under 6 yrs., no meat should be given From 6 to 10 yrs., not over 1 to 2 oz. From 10 to 14 yrs., not over 2 to 3 oz. Over 14 yrs., not over 2 to 6 oz.	12 to 16 oz. a day 5 to 7 lbs. a week

In Boston, on April first, 1920, the cost of the market order as given was \$11.50. Then the lowest allowance on which this family could safely be fed was \$11.50, at the rate of 50 cents per man per day or 14.7 cents per 1000 Calories. This basic allowance presupposes that every cent will be spent to the very best advantage. As we can hardly expect the very wisest expenditure of money in every case it seems best to safeguard the health of the children by allowing a margin of safety and raising the allowance to \$14.00, or 60.6 cents per man per day.

As a larger proportion of the food value of the diet of the young children is from more expensive foods than that of adults, it is hardly fair to base the allowances for children on the diet of adults. Individual allowances for them may be obtained by arranging separately the diet for children of various ages up to seven years, in such a way as to provide adequate food value, and then calculating the cost of the food. While the food for an adult may be purchased at a cost of 14.7 cents per 1000 Calories, the food for a child two years of age costs from 20 to 24 cents per 1000 Calories and for a child six years old, from 18 to 20 cents per 1000 Calories.

A scale of food cost allowances for the members of a family of various ages may be stated (for Boston) as follows, considering "A" the basic allowance, "B" with a margin of safety:

	A	B
Children under 2 yrs. of age	\$1.80 to	\$2.00
Children from 2 to 6 yrs.	1.90 to	2.25
Children from 6 to 10 yrs.	2.00 to	2.50
Children from 10 to 14 yrs.	2.30 to	3.00
Men—Heavy muscular work	4.00 to	4.50
Men—Moderate muscular work	3.50 to	4.25
Men—Light muscular work	3.00 to	3.50
Women—Heavy muscular work	3.20 to	4.00
Women—Moderate muscular work	3.00 to	3.75
Women—Light muscular work	2.50 to	3.00

Qualifications. For a nursing mother, increase the amount given by one half. For a family of three or less allow \$1.00 per week extra. A small family cannot live as economically as a large one. In case of sickness, an extra amount may be needed to allow for extra nourishment.

A CLOTHING INFORMATION BUREAU

The desire on the part of homemakers to select textiles and clothing with discrimination became evident during the war. The difficulties of the textile situation and the rising cost of living made the consumer realize the need of more knowledge, not only for home economy, but for the sake of the textile and clothing industries of the country.

To meet the situation, a center from which clothing facts could be disseminated was established by the Woman's City Club in Boston, as a part of its war service. The work was organized by Mrs. Mary Schenck Woolman, Textile Specialist for Massachusetts under the War Emergency Fund of the United States Department of Agriculture. The city of Boston gave it a home in a war hut on Boston Common, in the most frequented part of the city, and it was visited daily by consumers of all classes.

When the war was over and the huts were removed from the Common it was felt that the Clothing Information Bureau should not be abandoned, but should become a permanent part of city community work. The Woman's City Club, therefore, is continuing the work at 9 Hamilton Place. Miss Ada F. Blanchard, formerly of the Los Angeles Normal School, is still in charge.

The aim of the Bureau is threefold: (1) To increase intelligence in the selection of textiles, clothing, and garment accessories; in the making of new clothing and the renovating and remaking of old; in the manufacture of textiles and clothing, both ready-to-wear and homemade and in the responsibilities and costs of the retail trade. (2) To show that health can be conserved or injured by the manner of dressing, and to increase efficiency through the correct covering of the body. (3) To teach clothing economy and the use of the budget that thrift may be increased in the homes, thus coöperating with government campaigns organized for this purpose.

These aims are carried out by providing technical help in making and renovating clothing; the use of commercial patterns; labor saving methods of making garments; cutting and fitting garments; the care and laundering of clothing; dyeing and tinting of garments; how to test fabrics.

Health instruction is given on the reasons high heels and very narrowed toed shoes are injurious; where to buy correctly shaped shoes and satisfactory knitted underwear; what textiles to wear next to the skin; corsets and the healthy body.

Economical advice deals with how to make a clothing budget; the recognition of reliable materials; a minimum adequate wardrobe; estimated clothing expenses; keeping household accounts; where to buy to advantage; satisfactory material for service clothing; standard cloths.

Information is given as to classes, clubs, schools, magazines, reports, and factories to visit; on how to obtain exhibits, moving pictures of textiles, posters, photographs, and outlines for lectures and conferences, as well as teachers and speakers.

Students from the colleges, the Prince School of Education for Store Service, and other institutions, and children from the elementary and the high schools study at the Bureau. Exhibits, often loaned, have been held about three times a month on such subjects as garden clothing, service dresses, common sense varieties of shoes, varieties of stockings, testing material for fastness, examples of dyes with their effect on different fibers, domestic and foreign wools, wool substitutes, serviceable clothing for children, children's clothing made from worn garments.

Demonstrations and conferences are given twice a week on the various subjects on which advice has been asked at the Bureau.

An effort is being made to more completely serve the community than ever before, and traveling exhibits are being developed. Bureau workers are sent to local groups, and groups of representative women from the leading civic and welfare departments are working in coöperation with Miss Blanchard to increase the service to the association and to the city. Mrs. Woolman acts as textile specialist. Demonstrations are so well attended that there is not always room enough for the visitors. The daily press is keeping in touch with the Bureau. The work is spreading beyond Massachusetts, and so many demands for information are coming from over the entire country that a pamphlet will soon be issued which will tell specifically of the organization and methods of work. The Woman's City Club and those in charge of the Bureau are glad at any time to give help to those desiring to organize a like work. Such a center need not be expensive, and yet can render a valuable service.

KITCHENS

In our endeavor to work out the most efficient methods of work and to plan for the most modern equipment we often forget both the need for adapting the equipment to individual needs and the fact that there are different home ideals and conditions, that may make what seems to us an old-fashioned method sometimes most desirable. The kitchen of the Pullman car is often described as ideal, and so it is from the standpoint of compactness, the most necessary condition to observe in the moving train, but anyone who has been in such a kitchen and experienced its intense heat will hesitate to recommend it for the household. The kitchen well planned for the city apartment may not be at all adapted to the farm house, though in both places the same principles should be observed of correct routing, convenient arrangement of detail, and ease in doing work.

There are still many homes where the kitchen bears somewhat the same relation to the household as did the kitchen of colonial times, when this was the real heart of the house, the true living room. This type of kitchen is the one described by the writer of the following article, published some time ago in the *American Cooking School Magazine* (now *American Cookery*).

An article in a recent household magazine gives an enthusiastic description of a compact kitchenette, so tiny that it is modeled after a ship's kitchen and takes up almost as little room. The writer tells with what difficulty she stowed herself away, in order to visit with the owner while luncheon was being prepared. At first I felt a pang of envy, contrasting the order and neatness which prevailed there with the somewhat chaotic condition which met my eyes as I looked up from the magazine I had picked up to fill in the moments until the high school boy should arrive in his usual starved condition. When he came, however, I wondered how he would fit into that tiny kitchenette, for the high school boy is long of limb and broad of shoulder and still growing.

I envied no more, for our kitchen is the heart of the house. On the kitchen table the high school boy builds his aeroplanes and telegraph instruments, and solves his algebra problems, and conjugates his Latin verbs; at the kitchen sink he experiments with chemistry and physics, all with mother's sympathetic interest and help. A perfect kitchen companion is the jolly, whistling high school boy with his slang, his popular songs and his interest in everything from modern aeronautics and wireless telegraphy back to Alexander the Great and Julius Caesar. You can't lose your hold on every part of your

boy's life if he and his chums are under your feet in the kitchen on holidays and stormy days. Where is there room, pray tell, for taffy pulls and popcorn in a kitchenette?

On the fireless cooker in the corner (cooker made by said high school boy) the ten-year-old boy finds subjects and predicates, with mother's help, cons his spelling lessons and "bounds North America." In the chalked ring in the center he "knuckles down tight" and he may even spin his top here, build his kites and mend his sled.

Baby boy gets his first lessons here, too, builds his blocks and runs his choo-choo train, "cranks his auto" with meat grinder and bread mixer, learns his letters from oven door and cereal carton and his numbers from clock and scale dial and calendar.

Even the master of the house warms his back at the hot water boiler in the corner after his drives, as he answers the "Queen of the Kitchen's" inquiries about different patients he has visited that morning.

There is even room for the high school boy's chum, "the yaller dog," and four-year-old's kitten; yes, there is even a comfortable chair for the neighbor who runs in "to borrow" and stays to chat.

No, a kitchenette would never do for us.

KEEPING SERVANTS

The servant question, or the problem of first catching your cook before eating your hare, seems, like many other matters of present day discussion, to be a perennial one. In 1752 an attempt at a solution was offered by a worthy anonymous writer in a small pamphlet which hardly merits the oblivion time has bestowed upon it. The sixpenny was entitled "A proposal for the amendment and encouragement of servants." The proposal was, in brief, to raise a fund by popular subscription, for bestowing annual rewards on such servants as had lived long in a place; "viz., so much for one year, for two years, for three, and so on." The subscribers were to be organized into a society, but the writer does not tell us what happened to the subscribers who were unable to keep servants, even when the subscribers had always punctually paid their dues. He is certain, however, that he has solved the difficulty of keeping servants, for he goes on to say, "This scheme (which those who will give themselves the trouble to consider at large will probably not think altogether impracticable) I believe will be likely to conduce to a general reformation of our servants." Unfortunately history is silent about the results of this plan and we have no means of ascertaining whether it was ever put into effect.—*The Christian Science Monitor*.

FOOD AND FARE IN CANADA

From the statements in a recently published article¹ on Canadian food and food customs, the diet does not, after all, differ very much from what one finds in the United States.

If there is any diet which may be called purely Canadian, "it is that of the French, the original white Canadians. Thousands of the less sophisticated *habitants* in the valley of the St. Lawrence still have as their staple food at almost every meal the traditional pea soup, flavored and enriched with a bit of fat pork, and supplemented with plenty of bread baked in the great outdoor stone-built oven. Tea is their strongest drink, at home; but it is strong enough, in all conscience. Away from home, Jean Baptiste will rarely refuse a glass of *ouiske blanc*. *Sagamité*, a Red Indian dish of maize, is still made by French Canadians, who also vary their diet on festive occasions with blood puddings (not unknown among the Scots) and with *crêpes* and *croquinoles*, otherwise pancakes and doughnuts, which are assuredly no monopoly of any race." The description of Canadian farm home diet would seem very familiar to a great many Americans. The statement about pie, which follows, is of interest as it seems that, in this instance as in so many others, we have so taken over pie and made it our own that we had forgotten whence it came. "The pie which nearly always forms the second course is considered by old-world folk a peculiarly new-world institution; but, like many other 'Americanisms,' it is probably an earlier 'Anglicism' carried over the sea and flourishing there, though nearly obsolete in England. I remember, writes a Canadian correspondent, forty years ago, an old market woman in North Wales who brought a basketful of these pies to town every market day. They were the real thing—I recognized their brothers and sister on every dinner table when I went to Canada years afterwards—big round tarts, baked on a plate, upper crust and under crust with a layer of something fruity in the middle."

"Apple and mince pies are the commonest in our part [of Canada], but lemon pie, covered with meringue instead of upper crust, is reckoned a greater delicacy, and pumpkin pie, also devoid of upper crust, is the prime favorite of a minority. A quite different minority, chiefly English by birth, alternate pies with pudding of the usual English types."

¹ *The Table* [Great Britain], Vol. 68 (1920), No. 1762, p. 181.

EDITORIAL

The New Belgian Home Economics College. Many readers of the JOURNAL will remember M. Paul DeVuyst. He occupies a high position as Director General, Ministry of Agriculture, Belgium, having charge of the section dealing with inspection, education, and extension work in agriculture and home economics. He has long been connected with agricultural and home economics work in Belgium and is in large measure responsible for its success.

Owing to his efforts a college of agriculture and home economics for women is being established in Lierre, one of the suburbs of Brussels.

The new institution will be housed in an old chateau not far from one of the residences of the King of Belgium. His Majesty and the Queen are both greatly interested in this project, and their interest will be manifested in very effective ways.

Professor Jean Lindemans, who has been appointed Director of the new college, is now in the United States collecting data for the Belgian government regarding education in home economics and agriculture in this country and Canada. He will visit a number of schools and colleges before his return to Belgium and has spent some time in Washington. It is Director Lindemans' hope that the Belgian college may establish close contact with American colleges and that some exchange of students may be possible.

The American Home Economics Association and all others interested in home economics congratulate Belgium and wish the new college all success. One practical way of showing our interest would be to place the name of the college on our mailing lists so that it may receive catalogues and current bulletins and also when possible to send files of bulletins and reports of home economics work.

The American Home Economics Association has a personal interest in this project, as M. DeVuyst is one of its honorary members.

Home Economics Training College in India. A circular received from Baroda College, affiliated with the University of Bombay, gives details of a Collegiate School of Household Arts recently opened to

give graduate instruction in the fundamental principles and practices of private and institutional housekeeping. His Highness the Maharaja Gaekwar became interested in the establishment of the institution after a course of lectures on household arts had been delivered at Baroda College by Mrs. Ann Gilchrist Strong, for many years Director of the Department of Household Arts in the University of Cincinnati.

Admission to candidacy for the diploma in household arts is open to those who hold the B.A. or B.S. degree, while students who have passed a college matriculation examination may enter for a certificate course in household arts. The curriculum includes fundamental work in chemistry, economics, sociology, psychology, and ethics, and applied courses in housing, dietetics, textiles, household management, and household arts education. The faculty includes Mrs. Strong and a number of Indian professors, members of the Baroda College Faculty. The outline of the school points out that the training of teachers for district and village schools must in the future include ability to teach the household arts. Students will be expected to concern themselves with presenting in the vernaculars, orally or in print, the practical teachings of this subject. "For this," the announcement reads, "research must be made into social and economic conditions, in their bearing upon home life. Text books and other books dealing with home problems will require to be written, and written by Indians for India. This is an opportunity for household arts students. Government Departments require such women, in increasing numbers, for civic and social service. Institutional management requires and will demand other students. Hospitals need dietetians able to manage the practical preparation of invalid diets, and to teach dietetics to nurses. Laundries need managers who understand the chemistry of textiles and detergents as well as the mechanism of modern machinery. Palaces and hotels need household managers who understand modern methods and can deal with the servant problem.

"The student of household arts also has the opportunity of improving the health, happiness, and social well-being of the family, and making the home an example of the 'Art of Right-Living.'

"An expert always receives higher compensation than the general worker. It is reasonable to believe that those trained in household arts will receive improved financial remuneration."

THE OPEN FORUM

Family Living Expenses. The two-year Commercial Graduate's Civics Class, of Austin High School, conducted by George C. Brush, obtained an average family budget of living expenses for a period of one year. This class consists of fifty-eight pupils, and each pupil turned in an unsigned report, showing the amount of money expended for the family expenses and also the savings. The results are as follows:

Food.....	\$1119.00
Clothing.....	849.00
Shelter.....	592.00
Recreation.....	260.00
Church—charity.....	76.00
Insurance.....	144.00
Carfare.....	113.00
Miscellaneous.....	242.00
<hr/>	
Average total expenses.....	\$3395.00
Average savings.....	572.00
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Average income.....	\$3967.00
Average number of people per family.....	5

Among these fifty-eight families, forty-five had savings accounts, every family carried some insurance, and also donated to charity. There were 302 people included in this budget, and it took \$194,582.00 to support them for the past year.

These were comfortable families of Americans, chiefly of Irish and Swedish descent, who had been in this country for two or three generations. Is this typical of American expenditure? Does the very small amount spent for church and charity (less than 2 per cent) show the need for training along altruistic lines? Unless recreation includes travel, the amount spent for this and for clothing would seem to indicate self indulgence that might be corrected by systematic budget instruction.

NANCY G. GLADISH,
Austin High School.

BOOKS AND LITERATURE

Mess Officers' Manual. Philadelphia: Lea & Febiger, 1919, pp. 192.

This volume was prepared by several officers of the Division of Food and Nutrition, of the Medical Department, U. S. Army. It is designed to facilitate the work of camp nutrition officers. The topics considered are composition of food, selection and inspection of food and storage of foods, digestion and absorption of foods, nutritive value of foods in the diet, kitchen economy, and mess management, and the duties of mess officers. There is also a glossary, a list of additional reference books, and a full index. The tabular matter on food composition included in the discussion of food contains a number of foods not in the Department of Agriculture bulletin, on which it is based. The discussion of food contains a section on a topic not commonly considered in such connection, namely, flavoring substances.

Of special interest are such matters as the discussion of sampling foods, the information on judging the quality of meat, poultry, and other important foodstuffs in the ration, the care of the refrigerator, dairy products, vegetables, dry foods such as flour, and canned goods. Most of the foodstuffs given under the first three heads require refrigeration. The construction of a storage bin and a bread box are described in detail. The discussions of digestion and absorption of foods and their uses in the diet are convenient summaries of these important topics, while the discussion on kitchen economy and mess management provides a large amount of useful information regarding the hygiene of quarters, equipment, and personnel. The section on battalion and company mess officers and the hospital mess officer and staff is of decided interest to students of institution management, as are also the discussions of menu planning, meal planning, and other topics.

C. F. LANGWORTHY.

A Manual of Canning and Preserving. By THEODORA M. CARRELL. New York: E. P. Dutton & Company, 1919, pp. 101. \$1.50.

This Manual contains suggestive introductory material followed by well planned definite directions for carrying on specific canning processes.

Every Step in Canning. By GRACE VIALL GRAY. Chicago: Forbes & Company, 1919, pp. 253. \$1.25.

The short introduction describing the various methods of canning, laying emphasis upon the superiority of the single-period cold-pack over other methods, and giving suggestions for necessary canning equipment, is very direct and well worked out.

The following chapters deal with the canning of soft and hard fruits, vegetables, soups (with and without stocks), jellies, jams, and preserves, meat, fish, and poultry, with careful directions as to the preparation of the food material previous to canning. A chapter dealing with canning in tin, and a discussion of intermittent or fractional sterilization follows. There are directions for drying fruits and vegetables, for the salting, smoking, and preserving of meats, with a chapter on preservation of eggs and on the home storage of vegetables.

The material of the last two chapters discussing the marketing of the canned product and giving a list of firms supplying canning equipment is suggestive, and the tables showing the yield of canned products from raw material are helpful.

The subject matter is carefully arranged throughout. It is very convenient to have such a book bringing together the essential data for home canning.

RUTH ATWATER,
Pratt Institute.

The Book of Ice Cream. By W. W. FISK. New York: The Macmillan Company, 1919, pp. 302, figs. 88. \$2.50.

The rapid development of commercial ice cream making is spoken of at some length in an historical account of frozen foods of this type. The book brings together much information. Such questions as milk and cream and the manufactured milk products as related to ice cream; sugar; chocolate products; fruits; stabilizers and fillers; flavoring extracts; classification of ice cream and other frozen desserts; equipment; refrigeration as applied to ice cream making; ice cream processes, testing, and related topics, are taken up in this volume. Although the subject is treated chiefly from the manufacturer's standpoint, it has been the author's purpose to include material for the house keeper also.

The Family, Vol. I, No. 1. Published by the American Association for Organizing Family Social Work, 130 East 22nd Street, New York.

This new magazine appeared in its first issue in March, 1920, and is to appear monthly except in August and September. The "standard subscription" price (which does not cover cost of printing) is \$1.50 a year, with "full subscriptions" at \$3, "contributing subscriptions" \$5, and "patron's subscriptions" \$10; all classes of subscribers receiving the same service. Single copies are \$0.20.

This magazine is a publication which home economics libraries will wish to have for reference. It will consider the problems of social workers who deal with family readjustments, and will doubtless provide much economic and social material of value in developing instruction in this field.

The May number contains a description of a summer course for college juniors given by the Charity Organization Society in New York; a discussion of economic matters connected with the employment of social workers in an article On the Hiring Line; and a

paper on the New Visiting Housekeeper—her training and her work—by Emma Winslow.

Children's Garments. By EMILY AND MARIAN WALLBANK. London: Sir Isaac Pitman & Sons, Ltd., pp. 134. \$2.00.

This is a pleasingly printed English book describing the cutting, planning, and making of children's garments, with four useful full-sized flat patterns slipped into a pocket in the back cover of the book.

This book fills the need for simple drafts and directions for cutting garments for children, both girls and boys. Though some English terms used differ from our American expressions, the descriptions and cuts are so clear that anyone accustomed to drafting and cutting patterns can easily understand the text.

There is an excellent table of graded measurements in the front of the book, and all through the book the most explicit directions for block pattern making and adaptations of patterns to various ages and sizes. With the drafting and making of patterns very clear directions are given for the construction of each garment. Finishes and trimmings are suggested, all in excellent taste, and designs are those that are not likely to vary with the passing styles from year to year.

The book covers all sorts and kinds of children's garments from underclothes, nightgowns, and wrappers, to many styles of dresses for little girls and many types of blouses and "knickers" for little boys, even including a coat suit with waistcoat (typically English).

The book would be helpful to any seamstress making a specialty of children's garments, and particularly interesting and useful to an instructor who expects to teach the making of these garments. It should be added to all libraries of household arts text books on garment construction.

MARJORIE KINSEY,
Pratt Institute.

NEWS FROM THE FIELD

The Dietitians Section of the Home Economics Association of Philadelphia has held regular monthly meetings during the year.

Courses in several phases of post graduate work offered to student dietitians who are domestic science graduates were outlined at the February meeting by Emma Smedley, Director of School Luncheons, and by several dietitians in Philadelphia hospitals.

The viewpoints of graduates after entering the dietetic field were presented at the April meeting by dietitians from hospitals, cafeterias, tea rooms, school lunch rooms, college halls, and hotels in Philadelphia, New Jersey, Delaware, and New York.

The business meeting in May was followed by a social afternoon for which refreshments were prepared by Miss Cameron, Resident Dietitian, Woman's Homeopathic Hospital.

The officers for next year are: Mrs. Jennie M. Fuller, Pennsylvania Hospital, Chairman; Inez Griffin, Children's Homeopathic Hospital, Secretary; Meta Reese, Methodist Episcopal Hospital, Treasurer.

The Washington Home Economics Association held a conference for all home economics teachers, west of the mountains, on April 24 at the Stadium High School in Tacoma.

The program included, beside music and an auto ride given by the Rotary Club, a paper on Help the Other Departments are Giving Us, by Ruth Walker of Seattle; the Report of the Committee on Standardization of Textiles, by Grace Denny; and an account of Girls' Club Work, by Elizabeth Amery, University of Washington.

Janet E. Scott of Lincoln High School was toastmistress at the luncheon.

Saskatchewan Teachers' Courses. Acting upon the request of the Department of Education, the Council of the University of Saskatchewan has recommended to the Senate the establishment, during the academic year 1920-21, of a one-year course in household science for teachers in the provincial schools.

The object of this course is to give, within the period of the ordinary academic year, work which will be of substantial service to teachers in improving their equipment in household science. The course will include both foods and textiles, as well as the related subjects, including chemistry.

To be admitted to this course teachers must have a second class license or higher credentials. Preference will be given to teachers having three or more years' experience in the public schools. The class will be limited in number and therefore it is suggested that early application for admission be made to the Registrar of the University. It is recommended also that those teachers who have not had the work in chemistry required for first class diploma should, if possible, take the course in chemistry to be given at the summer session of the University.

The Lewis Hotel Training School, which has for three years conducted correspondence courses to train for hotel positions, has this year begun resident work. The School is in Washington, at 1324 New York Avenue, and Mrs. Henry C. Brown, the principal, will welcome any home economics visitors. The school trains for "every position from boiler room to roof garden." The complete course is ten months, the classes meeting twice a week, and the work being practically all in lectures and problems. The majority of the students in the resident work are women.

The field of hotel work is gradually offering more and more opportunities to women.

Among the outside lecturers who have spoken at the School this year are Miss Hunt of the Office of Home Economics who spoke on Food Values, and Miss Lord of Pratt Institute who spoke on the Worker and the Job.

Home Economics Motion Pictures. Since it is difficult at present to take students to see work in progress in the factory itself, home economics courses need to have the factory and farm brought to the school in order that processes of growth, and manufacture of textiles and foods may be seen and appreciated. The Motion Picture as a method of instruction can give, therefore, distinct service, and is being increasingly utilized in educational institutions.

The Community Motion Picture Bureau, 46 West Twenty-Fourth Street, New York City, which gave service to the United States Government during the war, has realized the importance of presenting home economics subjects before social, commercial, educational, and industrial institutions. This Bureau's service is outside of the theatre, in the community, or to groups within the community; hence, it is especially equipped for such work. The company considers that home economics films, to be of true value, must be organized by some one familiar with the work, and it, therefore, has asked Mrs. Mary Schenck Woolman, formerly of Teachers' College, Columbia University, to direct the making of several courses of home economics instruction.

As a beginning a series of ten textile subjects is being planned, such as spinning; weaving; knitting; cotton growing, spinning and manufacture; silk culture and manufacture; wool production, spinning and weaving; woolen and worsted finishing; flax growth

and manufacture into linen; bleaching, dyeing and printing, and embroidery and lace. Twenty subjects are planned in the food industries and in social and betterment work connected with the home. These include grains and cereals; poultry and eggs; butter and cheese; milk; meat cutting; cooking; laundering; furnishing and equipping the home; nutrition clinics; day nurseries, and like subjects.

The assembling of films relating to guidance of women into industry and to the National Safety Movement, are also urged and will be given attention in the future.

Mrs. Woolman is working directly in connection with the teachers of home economics, and with the American Home Economics Association, for she is undertaking this work for their service. Information can be obtained concerning these films by applying to her at the Community Motion Picture Bureau in New York, or at her home, Hotel Hemenway, Boston, Massachusetts.

Boys and Girls Club Work. Selma Rongstad, Assistant State Club Leader for South Dakota, writes: "The Boys and Girls Club Department of South Dakota is making bread baking one of the most important projects for 1920. The bread club work during this year will consist of baking various kinds of muffins, such as plain graham and rolled oats; baking powder biscuits; gingerbread; yeast breads such as white bread, graham, rye, and rolled oats; and various kinds of yeast rolls.

"The club members will do their baking at home and in club groups; during the year they will give public demonstrations. The three best bread demonstrators in the county are chosen to go to the State Fair, where they will give public demonstrations competing for State Honors."

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IF NOT WHY NOT ?

MRS. MAX WEST

Every morning, as I sit at my desk, there passes my window an entrancing procession. It is composed of what the older writers would have described as "youths and maidens," but who call themselves and each other "men" and "girls." The procession is headed for the great State University, rearing its stately white walls against a background of green hills, a few blocks further down the street. If the entire procession should go down our street some morning, I should need to provide myself with a comfortable chair, for it would be composed of more than nine thousand students who have come here from all parts of the United States, including its island possessions, and from many foreign countries.

The section I am privileged to observe drifts past singly, in couples, or in groups, and their talk and laughter spills out along the way. They are as indifferent to possible observers as they are to the sidewalk beneath their springing feet, or the blue over their proud young heads. The earth and the fulness thereof—including commentators—is theirs; why, they would probably say, worry?

Just now the spectacle is become particularly fascinating. The mild spring days have brought out a rainbow mass of color in the coats, sweaters, and smocks of the girls, of every possible hue, as well as some impossible ones. Apparently there is no limit upon the vividness of acceptable color, and, while one might cavil at individual taste occasionally, the mass effect as displayed at student gatherings, especially when seen against the gray background of their outdoor theater, is delightful.

But if their garments are varied, there is a striking general similarity among them. Is it, I wonder, that America is really evolving a stand-

ard type of young woman? At a little distance they look so much alike that it is quite amazing, and I am always studying to find out whether it is because they all adhere rather closely to the prevailing vogue in garments, *coiffure*, and carriage, or whether there is not a more fundamental resemblance, really pointing to the development of a recognizable type? If it is due only to the sequaciousness of the human being, especially the female, it is an interesting phenomenon and one worthy to be studied.

At least nine out of every ten of the girls are wearing plaid skirts—kilt-, box-, or accordion-pleated, as the advertisements say, accompanied by a sport coat or sweater matching the predominant color of the skirt. Their heads, usually bare in this climate, have a notably uniform appearance at a little distance. Some are still using the shiny, varnished effect of the past year or two, with the hair tightly confined in invisible nets; others have adopted a new vogue in which tight little blobs of hair alternate with huge puffs, bulging out in unexpected places, the whole stiffly marcelled. No pins or other ornaments are worn, nor—thanks be!—any black velvet bandeaus cutting the forehead in two.

Nothing delights me more about their get-up than their shoes. For the greater part of these girls evidently eschew French heels, at least for the Campus, and their walk is, in consequence, a delight to behold. Since they do not have to balance the weight of their vigorous young bodies on pegs or stilts, they are able to plant their feet squarely at every step, with a freedom of action that is in sharp contrast to the mincing, silly walk of the exceptional girl who passes, bound both by bad shoes and a tight skirt. But do not mistake me! If the Washington group, who once debated the question as to whether highbrowness varies inversely with the height of one's heels, could look at these girls they would realize that there is no question at all, for the low or moderate heels are by no means confined to the frumps—if such there be! They are all stylishly and—alas!—expensively shod. The price for these popular college shoes is from \$10.00 a pair up, mostly up!

The "men" have a vogue no less pronounced than that of the women. This is for what I understand to be described in their parlance as "cords;" that is, corduroy trousers, mostly of a light brown, but shading into buff, and, occasionally, of a bright yellow. Being a stranger, I have not yet learned the genesis of these garments. Possibly they have come as a shading off from the khaki of recent seasons; possibly the male soul, too, feels the need for expressing his youth and joy of living in color; probably the plain reason is their comparative cheapness. When a new tailor.

made overcoat, costing \$75.00, is so poor that the buttons pull out of the very texture of the cloth the first winter, I wonder how boys like these, many of whom are paying their own way through college, can afford to wear wool clothing at all.

Candor compels me to say, however, that "cords" are not things of beauty undefiled. Usually far otherwise. Streaked with stains from lying on convenient and sun-warmed grass plots in off hours, or soiled with the black mud of the athletic fields, they testify to their owners' independence of mind, for evidently it is not *a la mode* to launder them any too often. (Perhaps they shrink!) But who cares, if the lads are happy, bless 'em! Certainly not their humble reporter.

I think the strongest single impression I get from them all, men and women alike, is their beauty—a beauty of form, color, and fine, upstanding posture, proclaiming that within them the springs of health are bubbling high. It restores one's faith in good old Mother Nature. Surely a race such as these ought to be able to build a new and better civilization upon the earth.

The question ever recurring to my mind as I watch the charming panorama unfold itself each day is one which has been asked, since the days of Aristotle, concerning the purpose of education. What are all these thousands of young people here for; what will they get out of it; what lode star draws them here in such hordes that they swamp the living quarters of the town, and overwhelm the University? There isn't a university or college in this country that could adequately meet such a demand. It was said that one of the history classes had at the beginning of the semester over twelve hundred registrants! It is obviously impossible for any conceivable teaching force, at present constituted, to do fine intensive work when faced with such crowded class rooms; it is appalling alike from the standpoint of teacher and pupil. And the same cry is going up from colleges and universities of all sorts in every part of the country. Nothing can be plainer, it seems to me, than the demand of the new era for more money for education, a demand which must, of course, be met. An education has come, since the war, to be a pearl of greater price than ever before. The value of the trained and well-stored mind has been demonstrated in a thousand thrilling instances to all the boys who went to war. The star of the college professor has shone out in no uncertain light. The plodder, the bookworm, the dreamer, the absent-minded blunderbuss, each has come unmistakably into his own. It has suddenly become apparent to hordes of young people that a

degree is something more than an affectation, and that the college bred are not, necessarily, snobs!

These eager thousands of young people, and other eager thousands the country over, are without doubt making the basic assumption that if they put themselves in the hands of the university for four years the university will, at the end of that time, send them forth "educated." That they will thenceforth be able to secure better positions, higher paid and more important work, in short, be better fitted to cope with life. This assumption is certainly made in the homes from which the greater part of this army comes. I feel rather chokey when I think of that part of it, remembering all the sacrifices, the unselfishness, the givings-up, that son or daughter may be sent to college. The loneliness of fathers and mothers on distant farms and ranches, their patient wonderment as the stories of initiation larks, circuses, and revelries of many kinds filter back to them as to what time can be left for study, all raise the insistent question: what, after all, are these young people going to get out of it? Are our great institutions of popular education really going to justify this enormous trust? What will be the verdict as life subjects these boys and girls to its acid test?

One flippant reply which can always be made to this query is, why worry? Only one or two per cent of our children ever get as far as college in their educational careers, so the good or ill effect of college life is not a matter for general concern. In rebuttal, it is only necessary to point to the attendance records at practically all colleges in the year 1919-20. There can be little question that there is a definite setting of the tide toward our institutions for higher learning, which will, if the college rises to its opportunity, continue to swell as the years go by. How this demand is to be met, both extensively and intensively, is a matter for grave concern.

It all comes back finally to abstruse questions of educational values, and, primarily, to that of the real purpose of education. Men have given and are giving their lives to the patient study of such questions; it is not likely that the discussions will cease for some generations to come. But for the modest purposes of these comments we may be permitted to assume that the purpose of education is threefold; first, the strengthening and developing of the mind, *per se*; second, the acquisition of knowledge for cultural purposes; and third, to learn the fundamental principles, at least, of one's task in life. To these a fourth might well be added, that of learning health habits, though the education for health should

have been begun as far back as any education can begin, long before the college age. This part of their task most institutions of higher learning are doing admirably, some of them supremely well. It is quite safe to say, I believe, that nowadays most young people have better care of their health and development in college than they do in the smother of maternal injudiciousness in their own homes. It is hardly necessary to enlarge upon the virtues of the present day regime in most first-class colleges. The provision of time and equipment for all sorts of health-giving exercises; the prompt isolation of illness, and its treatment in properly equipped institutions, when necessary, are well known. Often, indeed, it is this phase of college life which most recommends it to parents, and, since so much of our education has to work backwards, it is to be hoped that possibly sometime the health ideals taught in college may seep downward through the lower schools and finally, into the home itself, where most of the mischief is now done.

What these young people will actually take away with them at the end of their college courses will, it seems to me, be largely determined by three factors; first, the judgment with which the course of study is selected to fit the particular mentality and type, and the proportion of "brain-stretchers" to "snaps" in it; second, and very much, upon the personality of the professors and instructors under whose influence a student chiefly comes—an important point in the selection of a major subject; and, perhaps most of all, upon the amount of the mental gold the candidate has to take with him when he starts out to fetch the intellectual wealth of the Indies. If you cannot make a purse out of a sow's ear, you may be able to make something else quite as useful, and the need for judicious student advisers who are a combination of psychologist, psycho-analyst, physiologist, and specialist in vocational guidance, as well as counsellor and friend, is a crying one in every college.

This last factor, that is, the fitness of the boy or girl to take on education, is not within the control of the colleges, save to the extent that they are able to select their students through the medium of stiffened entrance examinations. But for the others it has the fullest and gravest responsibility, although it can only fulfill this responsibility when the body of the people furnish the vast sums of money which such a vast undertaking demands. Several great institutions are, at this moment, almost in financial straits, owing to the unexpected, because unprecedented, demand upon their resources of every sort,—buildings, equipment, living halls, and, most of all, teachers. The drain upon the teaching forces

of our best colleges and universities has been severe for some years, and will continue as long as highly trained men and women are offered better salaries in other fields. One thing is certain, and that is that as long as our institutions of higher education must carry a certain proportion of men and women of mediocre ability upon their staff—as they must do until the outrageous standards of payment can be uprooted and a fair living scale established—that our young people are going to be sadly the losers in this great game of education. This, too, is a matter that reaches far back into the beginnings of things. One of the biting questions we parents must always be asking ourselves is why we permit the training and teaching of our little boys and girls during the years which are, by all odds, the most important in their entire lives, when the wax is soft to the molder's hands, to be given over in a very large number of instances, if not usually, to young girls, irresponsible, inexperienced and untrained, who are often as innocent of the basal sciences, psychology, pedagogy, sociology, and economics, as they are of Sanscrit? Is it not of infinitely greater importance to the welfare of America that her hordes of children between the ages of five and twelve shall be well taught, than that the fraction which finally reaches college should be, since these older ones are able, to some extent, at least, to discount the wisdom of their elders. But this, like health education, is an ideal. Certainly it will not be realized as long as we are willing to permit the profession of teaching to be starved.

It is a perfectly safe prognosis that, as far as universities and colleges are concerned, the money will be forthcoming. Neither state legislatures nor private citizens with wealth will be able to withstand the insistent demand which is going up in every part of the country and we may safely assume that the necessary expansion will be made possible, and that very soon. Assuming this, we who are parents, with sons and daughters soon to be sent to college, may, in all propriety, ask the colleges what they are going to do for our precious ones. Is it going to be worth all it will cost them, and us, whose happiness will lie in their happiness and success in the business of living?

As I look at it, the answer may be affirmative with regard to men, more surely than with regard to women. Young men, like those I see every day, appear to me to have a pretty clear idea of what they have come to college for, and are making it plain to the college. Whether the admixture of "brain-stretching" courses and those which particularly bestow that elusive quality we call culture is as large as one might wish, is doubtless open to question. Here is where the highly competent

student adviser is so sorely needed. But on the vocational side there can be no question that the two universities with which I am best acquainted, and I doubt not others, are doing a work of immeasurable value. It is hardly possible to mention an avenue of interest in which the university does not stand ready to act as guide, counsellor, and friend. From road making and concrete work, to journalism and architecture, the list of subjects taught is endless. It would seem that the feast spread is bountiful beyond telling. If the student fails to find dishes to his liking and upon which he will thrive, it is not the fault of the menu makers.

But with respect to the girls, one can hardly feel so secure.

Women today are asking exactly the same things of education as men; to be developed in all their powers and faculties, that they may have life and have it more abundantly; and so trained that they may carry on their own special avocations with the greatest degrees of efficiency and success. Are they getting it? For answer, scan the reports of the United States Children's Bureau, the United States Bureau of the Census on Mortality Statistics, Marriage and Divorce, and on Benovolent Institutions; or similar records for many a state or large city.

Of course the pertinent answer may be made that it is not the college-trained woman who figures in these exhibits, since the proportion of her to the general population is small. To which reply might be made with the counter charge that the college bred woman is, in a serious number of cases, evading her responsibilities; first, by not marrying; second, by marrying late; and third, by refusing motherhood. But it is not my purpose here to enter upon these phases of the controversy. The question I am raising is only with respect to the value of the college education to the successful working out of the manifest destiny of women, which is, as long as the present order of mundane things remains, to be the mother of children and the creator of the home—a destiny of greater importance to a suffering world than any ever dreamed of since Adam and Eve made a mess of things!

We cannot get away from the eternal verities however we may squirm and wriggle. Men and women are not alike; their place and office in the evolution of civilization is and must always be different, though paramount, and it is a useless waste of time to deny it or argue about it. The time has certainly come for women to tackle the problems involved and to demand from an expensive education that it fit them for these undertakings.

There are, it seems to me, two principal reasons why the girl does not get all this out of her college training. The first lies in the fact that up to the very recent years, at least, the courses for women have been a slavish imitation of those for men. This for obvious reasons. Second, that the courses in homemaking, given admirably in a few colleges and partially in others, are regarded by too many girls as beneath their attention, as being merely vocational and lacking in "brain-stretching" courses as well as in cultural values. Here is where I throw down a challenge to the colleges of every kind which admit women! It is "up" to them to dissipate such falsity and sham. Such views are not only nonsense but nonsense of a peculiarly dangerous and insidious variety, and educators must come to see this and to strive to create a sounder sense of proportion and a more wholesome evaluation of the factors in education among the young women whose destinies they have undertaken to guide.

Here, of course, my opponents will say that the girls won't take those courses if they are offered, and I admit it. Probably not; certainly not in any great numbers while the present miasma pervades their minds that the one great purpose of an education is to get them a good job, paying a large salary, preferably, in those economic and other fields where they compete with men.

I went the other night to a meeting of a club composed of Junior and Senior girls majoring in economics. The speaker they had invited to address them on the opportunities for women in the work of the world was one of the leading economists of the country. He spoke for an hour or two, setting forth with nice discrimination, the daily multiplying openings for women in the various occupations, and especially for the women trained in economics and kindred sciences, but all wage-earning, and all outside the home. At one moment he spoke of one of his own women students who had taken the "best" job, in marrying and raising a family of five boys, but this was passed over, by the audience at least, as a lightsome interlude in the really serious discussion of the evening. At no other place in the warm fire of question and discussion that followed the speaker's address did the professions of homemaking and parenthood have a show. The assumption that every girl's ideal was a money making job, as soon as she graduates, was apparently concurred in without even raising the question.

What has raised such ideals in the minds of our girls? First, of course, the pressure of social and industrial conditions as they are,—a pressure

that might, without doubt, be traced back to some extent to the very fact of the sudden outpouring of women from the home into wage-earning industries,—but a tendency which instead of being discouraged by our educational authorities is, as I see it, being in every way fostered by them. Surely it is a solemn part of the responsibility of any college to see that its influence is toward the formation of sound policies and proper choices. Here, I am sure, lies one of its most valuable contributions to the education of men. Why not exert the same guiding force for women? Again the question reaches back into the fundamentals, but as in everything educational most good will be accomplished by indirection. What is needed is a scrambling of the present curriculum for women as it usually exists, and the evolution of one built on the basis of a wise, deliberated, and weighted selection of subjects of study with an enlightened set of educational values in mind, which accepts as settled such facts as these: that, since out of the home are the issues of life itself, no training, for those who are destined by immutable natural law to be home-makers in a new and much more demanding civilization than any the world has yet seen, can be too stern, too wide, too cultural.

In such a curriculum she will have her mind trained, polished, sharpened by contact with the steel of mathematics and the sciences. She will need all the beauty, charity, and sweetness that the study of literature and the arts will give; and her horizons must be widened through the pursuit of history, social and political economics, and kindred subjects. But, and here is the fundamental point, all these subjects must have a positive relation to her special needs. There is no possible reason why the subjects of chemistry and physics, for example, should not be quite as effective in developing the mind if they relate to the manifold applications of these sciences to the household; economics and sociology are just as capable of broadening the outlook if they dwell upon the questions of domestic finance, household management, or consider the present state of the home as revealed by the study of the reports such as are above mentioned. History, too, could, with infinite profit, concern itself with the evolution and development of the home. There can be no possible question, of course, of this relation as regards the present courses in liberal arts.

It will not be long, I think, before one of the great universities—for such development is bound to begin, I think, in one of the coeducational institutions rather than in the more cloistered atmosphere of colleges for women—will “step on the gas,” to use a pungent (no pun intended!)

phrase of the moment, and spring suddenly forward with this idea worked out in detail. In this college there will be some readjustments to be made. And a new department will be established (possibly to be called the Chair of Domology, or the Science of the Home or of Human Relations) in which basal work in this new science may be carried on. Research must needs be an important and even preliminary factor in such a plan, and there will be an infinitely wide field for such research and for the application of the theories which may be evolved from it. Such a course as this will at once serve two purposes, first that of dignifying the whole matter and thus changing and influencing women students to look upon it in a new light; second, of beginning to solve some of the many problems with which the whole subject is now complicated; and, third, the setting in motion, chiefly through the resultant effect of such study upon women, forces which will help to bring them into more normal relation to the home, and finally help to cure some of the sorrows of the world today.

It will, of course, be replied that many girls may not have a chance to marry; that many will prefer a career; that people cannot marry young any more, that a young man cannot alone support a home and wife, with a possible family; that domestic labor is slavery; that modern girls are not willing to bear such burdens as they see older women bearing; that their expensive educations will be thrown away; that the husband will soon grow away from the wife, and so on, *ad infinitum*. Exactly! All these things but prove my case. There is so much that is wrong and bad about the domestic situation as it stands today that there is sore need for study of the severest sort to see how it may be made right. The home, as an institution, is the center and core of all civilizations and it is useless to try palliative measures while the source of infection remains untouched. If for one generation women would put their minds upon the solution of these problems that lie at the very heart of national and private happiness and welfare, the dawn of a new and better era for a weary and distracted world would arise. One of the first demands they will inevitably make in such an enterprise will be for new ideals in the education of their daughters.

Is it not absurd—would it not be laughable, if it were not in effect a tragedy—that the only one in all the wide range of human professions that people would dream of entering without (oftentimes) a vestige of special preparation for it, should be by all odds the most vitally important one? We would never dream of permitting our young people to engage in any important money making occupation without fortifying them

with such education as could be afforded, or, at least, consciously recognizing the need and regretting its absence. Here is what Herbert Spencer thought about it:

If by some strange chance not a vestige of us descended to the remote future save a pile of our school-books or some college examination papers, we may imagine how puzzled an antiquarian of the period would be on finding in them no indication that the learners were ever likely to be parents. "This must have been the curriculum for their celibates," we may fancy him concluding. "I perceive here an elaborate preparation for many things; especially for reading the books of extinct nations and of coexisting nations (from which indeed it seems clear that these people had very little worth reading in their own tongue); but I find no reference whatever to the bringing up of children. They could not have been so absurd as to omit all training for this gravest of responsibilities. Evidently, then, this was the school course of one of their monastic orders."

As I write these words, we women are waiting breathlessly for one or another state to assume the honor of being the thirty-sixth to ratify the Anthony Amendment. Before these words are read there is little doubt that this will be a fact accomplished, and we shall be free to take the place in the affairs of our beloved country that a blind stupidity has so long denied us. It might be pertinent to inquire what the universities and colleges are doing to fit women for these new duties, but this is aside from my present purpose, and is, I believe, a question which will be answered as soon as the greater one is opened in a big way. For there is no doubt that women's political power will be directed toward matters which relate chiefly to the home, children, and women, and by the very fact that her attention is turned to these subjects she will be able to see farther into the whole mass of related questions, including the education of her daughters.

If I were to ask one of these pretty creatures who so delightfully adorns my immediate landscape each day, what she thinks about all this, I might or might not get an illuminating answer, but I am certain that down deep in her heart there is the picture of a home in which she will some time be the center and light, and that she knows, though she may never admit it to me, that the delectable position she is pursuing so ardently today is really only one to be held while she is waiting. Is it not a great pity that she has fallen between two educational stools, and often is being fitted, supremely well, neither for the one thing or the other?

CHILD CARE IN THE OREGON AGRICULTURAL COLLEGE PRACTICE HOUSE

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The School of Home Economics of the Oregon Agricultural College first offered a lecture course in mothercraft five years ago. This course has developed from a very condensed one-credit elective course to a three-credit required course in child care. This school established a Practice House¹ in September of 1916. Here the laboratory course of household management is offered to junior and senior students. Both of these courses have been very popular and have justified their establishment. However we have thought from the beginning, as have other colleges,² that the most important piece of work of the household, the work around which the average household should center, has been omitted, that is, actual practice in the care and training of the child.

If a woman needs laboratory practice in care of the house to teach the management of the household operations, of the income, of family and community relations there seems to be every reason why she should need laboratory practice in the most important duty which ever falls to her lot. Many people have accepted the theory that such training is most desirable from the standpoint of the student but only a few have believed that it would not be injurious to the child in question. Yet the vast majority of children are cared for by parents who have never had any training in child care and who have no expert supervision when doing the work for the first time. There seems to be no psychological theory to prove that the position of parenthood alone gives all that is necessary for the proper care and training of the child.

On the contrary there seems every reason to believe that from the standpoint of the adult much better work can be done when the mother has had some experience prior to motherhood in caring for and training children under the guidance of a trained and experienced person. The child cared for under such conditions should receive better care and training than the one who is under the care of a person wholly inexperienced in such work even though that person be the mother. It is generally conceded that no child is so fortunate as the one whose lot it

¹ *Journal of Home Economics*, Feb., 1917, p. 71.

² *Journal of Home Economics*, Jan., 1920, p. 28.

is to be brought up in its own home by its own parents, who realize the great responsibility of parenthood and who exercise "love, firmness, and intelligence" in the care and training of their own child. It is to give young women experience that will result in greater intelligence in the bringing up of their own children that child care has been made a part of our practice house training.

Our practice house is open to junior and senior students and pre-requisites for entrance to the house include such courses as housewifery, dietetics, and child care, as well as psychology—a college requirement for graduation. Students who have completed such courses should be capable of caring for children under proper supervision.

When the work was started it was our intention to make an effort to secure a child from a children's home, but before the final plans were made Patsy, a perfectly normal child of sixteen months, came to our attention. Her mother was to be a graduate student of the institution for a year and it was necessary to "farm the child out" to strangers who would be paid to care for her. It was an easy matter to work out a plan whereby the mother could be a resident in the house during the period while the child was becoming acquainted with the new life. After six weeks the student mother became a housemother in a small nearby dormitory housing twenty-two girls. This made it possible for Patsy to see her mother frequently and still be cared for by students living in the practice house.

Much discouragement was offered by outsiders, many people seeming to feel that it was perfectly proper to have a child from an orphanage cared for in a practice house but that it was very dangerous for the child with a parent. Others seemed to feel that the child would have its health ruined while almost every one was confident that it would be "terribly spoiled." Had it not been for an unlimited amount of faith in the ultimate success of the experiment we should have grown faint hearted before the child arrived. However, there was the occasional young mother who came to us and expressed a profound regret at not having had such responsibility and training before her own child arrived.

After seven and one-half months of the experiment we are convinced that child care is a most vital part of practice house training, and we have obtained the confidence of those who know of our work. In fact two of our own graduates, who have been in the College since our practice house was established and know the value of the training received

there, have offered their babies to us for a period during which they find it necessary to devote a large share of their time to other work. One of these young mothers, whose husband's work keeps him away from home a part of the time and who is unable at present to have a permanent home, is now on the campus studying for a few months. Her year-old son has become a member of the practice house family and after only a few weeks of work with two babies we feel sure that we have taken another step forward in child care. The mother of the baby is boarding in the house.

PROBLEMS OF CHILD CARE

Food. Patsy is on a diet and schedule for a normal child of her age. A definite schedule is posted and the nurse maid is responsible for all food and all feedings. Our students have demonstrated to their own satisfaction that the dislike of a child for any kind of wholesome food is largely psychological. No new food which should enter the diet has ever been refused. Patsy had not been trained to eat cereal or to drink her milk from a glass when she came to us. Both of these habits were established within a few days and with no unhappiness to the child. The use of psychology was all that was necessary. The question of having the child ask for food which she should not have has never been a problem at all. Her meal schedule is not the same as that of the family, her breakfast and dinner coming later and her supper coming earlier. During the family dinner, she, not being hungry, is most content to play with her toys in the living room. This seems to be most surprising to our guests. Parents, grandparents, and all who come to the house as dinner guests admit that they have never seen a happier and better baby at meal time. This is partly because we started right. There has never been a heart-ache or a tear, because it was the right thing that was done first.

Sleep. The nurse maid sleeps in the same room with the children. This is a very large south-west room with three extra large windows. Patsy's rest hours consist of a long night which is seldom interrupted by wakefulness, and a three hour sleep in the middle of the day. Here again the students have demonstrated to themselves that a healthy child likes to go to sleep. Many a girl has claimed that the little smile, the final "good night" as the covers were tucked in are pay for all the work a baby has made necessary during the day. Our nearest neighbor whose sleeping porch is only thirty or forty feet from the babies' sleeping room claims never to have heard the children at night.

Play. Patsy was walking when she came to us. She has always been allowed to play out when the weather would permit. A sand box on a pergola has given hours of happiness. Oregon is a land of winter rain but the north porch which is seldom wet furnished a place where some outside exercise could be had even on the worst days.

Health. Patsy is one of the few children of the town who have not had whooping cough during the winter. She has had a cold twice. Both colds had an effect upon her development curve and both were contracted during a vacation when she was taken to her grandmother's on a train.

Training. A very important part of our problem has been the giving of proper training. We started with a child who might easily have been spoiled. She is pretty, has beautiful brown eyes and hair, and a will of her own. But since she had a sensible mother there were no bad habits to overcome. We have exercised gentleness and firmness and have never tried to amuse the child. The result is that she is wholly unaware of her own charms, does not try to show off, and is most natural in her manner, neither forward nor undesirably timid.

Her vocabulary has developed from a few baby words to long sentences that are easily understood. Her memory of former residents of the house is very interesting for she calls them by name months after they have left the house.

We knew that the many study tables and dressers with their attractive articles would be fascinating in the beginning, so we planned to have certain toys on each floor and checked the first attempt to play with the girls' belongings. Students do not offer their belongings as toys. All toys are kept in interesting baskets and there is never any question about putting them away when the right method is used.

The greatest problem in training has been presented from the outside. The faculty woman who is in charge of a practice house can easily manage her own family but she cannot get an entire college community to keep its distance when a lovable child, who is being watched by everyone, goes for an airing. Fortunately, the practice house family has not made a "plaything" of the child and she therefore enters a protest when every stranger insists on imposing on her when she is out. However, she will shake hands and salute strangers quite properly if they will keep hands off. This has been a great asset. It is appalling to see how few people realize that a child is an individual and not a toy to be tossed about by everyone who chooses.

PROBLEMS OF MANAGEMENT

Equipment. Practically all equipment such as bed, toilet chair, and clothing has been furnished by the mother. This is simple and has been added to from house funds or by students who wanted to make gifts. Another year we hope to have the entire wardrobe of the child planned and worked out in our household art classes. Some pieces have been made and donated by students this year.

Cost. Carriage and high chair have been donated. Some clothing and other small pieces of equipment have been purchased by the house. This has totaled about \$7.00 for 7½ months. The mother has paid \$10.00 a month toward the support of the child. This has just about covered the cost of food at present prices.

Food. Students are expected to be familiar with child feeding through their course in child care. Little extra preparation of foods has been necessary, the nurse maid simply using from the family supply in most cases, being careful to see that she is always a little ahead of the baby's needs as to market orders.

Laundry. The laundry for the baby has been done by the nurse maid when there was the one child only, but now that we have two, it seems advisable to have this work done by the laundress, whose duties are usually light, since she is only responsible for the washing and ironing of table linens and the sending out of the bed and bathroom linens of the house. The new plan has worked well, the nurse maid being careful to have all articles in the hands of the laundress by a certain hour in the morning and she having those same articles back in the hands of the nurse maid in twenty-four hours.

Supervision of Play. Most of this has been done without the child being aware of it. The nurse maid can easily go about her other duties while the child plays in the same room or an adjoining one. When Patsy is on a porch playing the student may work inside a window with curtain thrown back. Concentrated study over long periods of time is impossible. This is a good time to sew or mend. The best time for the care taker to do her heaviest studying is when the child is in bed.

Time. All figures must be approximate. The time actually spent in caring for Patsy has varied from 4½ hours a day to 6½ hours depending upon the speed and skill of the student. Five hours would perhaps be a good average for the amount of time in which nothing else is done.

Student's Schedule. Since our students remain in the house one-half of a term and elect practice teaching or tea room management the other half of the term, most of them have easy schedules to adjust, since in neither case do they schedule many forenoon classes. A substitute nurse maid schedule is necessary to make it possible for students to attend classes. An hour is occasionally found when every member of the family has a class. The student in charge is expected to secure a former member of the house who comes for that hour. Only on three or four hours during the entire year has it been necessary for a student to miss a class and that in every case has been the home management class, running parallel with practice house work.

CONCLUSIONS

After $7\frac{1}{2}$ months experience with child care as a part of practice house training the staff of the School of Home Economics as well as 40 students who have helped to care for the children have reached the conclusion that:

1. The work should be continued for these reasons:
 - a. It gives valuable training to students.
 - b. It furnishes excellent care to the children.
 - c. It does not "spoil" the child.
 - d. The students are enthusiastic about the work.
 - e. It makes the practice house more homelike.
 - f. It helps to train for the most important function of women—motherhood.
2. That two children of different ages should be taken whenever possible.

THE NEW YORK CHILD HEALTH CONFERENCE—IMPRES-
SIONS AND REACTIONS¹

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It is said that there are forty agencies in New York City concerned in, or devoted to, Child Welfare. At the beginning of a movement of this kind there are certain advantages in a multiplicity of independent efforts to solve the given problem. While some of these efforts will be top heavy with a one idea, this very fact brings out the individual phases of the problem with a vividness that one conservative, well-balanced effort would find difficult to accomplish in the formative stages of the movement. The well rounded program, which must be the next stage if progress is to continue, may well acknowledge its debt to the enthusiastic pioneers, even to those who believed in panaceas.

Throughout the program of the Child Health Conference this vividness of the individual phase was noticeable, even when the speaker sketched in a comprehensive plan of attack. It was shown, for example, what may be done by utilizing a child's eagerness to take part in a constructive enterprise. An instance was cited of a sanitary survey carried out by school children. A map of the town was plotted showing the exact location of privies, bad wells, etc., and the map was hung in the local postoffice, to the consternation of the citizens.

It was pointed out by another speaker how necessary is vividness of presentation in enlisting the attention and coöperation of the child at the beginning of any effort to correct faulty health habits, and the practical use which may be made of the services of an advertising expert in passing upon printed matter.

On the other hand, it was emphasized that the crystallizing of the child's initial interest into health habits might be by far the more difficult and important process. Frequent and detailed reports by the child, reinforced by class rivalry and public opinion among classmates, assist in converting knowledge and temporary interest into permanent and desirable health habits. The story of the boy who attempted to take nine baths in one afternoon in order to square his record, which was disgracing that of his class, gives an insight not only into the compelling

¹ New York Child Health Conference held May 19 to 21, 1920, at the Academy of Medicine, New York City.

power of childish public opinion, but perhaps even more into the ingenious if well-meant subterfuges of the child mind in attempting to deal with those who would change his habits.

The subject of the school luncheon was, of course, a live topic. The history of the movement both in England and in America was sketched, and data concerning the extent to which the movement has spread, and the results it has accomplished, were given. Especially good results in bringing malnourished children up to normal weight have followed the use of the mid-morning and mid-afternoon luncheon. In the case of children for whom it is necessary to provide milk on account of poverty, the home may still be made a contributor to the enterprise by the requirement that the child bring a bottle—a clean bottle—each day from home. A warning was sounded against regarding school lunches as a panacea or allowing abuses to creep in, such as an assumption on the part of parents that food given at school is to be regarded as a substitution for, not an addition to, food given at home. Except in so far as it may be for the purpose of scientific demonstration, or propaganda, school feeding fails of its chief function if it is used merely for the purpose of putting food into children, and not also of establishing standards and food habits. As an illustration of the need for better selection of food, it was stated that in many country districts in Indiana the diet of the people resembles a pre-pellagra diet. In some districts 100 per cent of the questionnaires tabulated confessed to a condition of “stomach trouble” and the use of patent medicines. The general custom of eating a big Sunday dinner, with its unfortunate after effects, accounted for many slumps in weight among the children.

The possible relation between digestive upsets in infants and consequent adult digestive ailments was suggested, as was also the importance of being well-born and breast fed as a start toward normal health.

The inter-relationship between tuberculosis and malnutrition was pointed out: on the one hand malnutrition predisposes to infection; and on the other, a strikingly large proportion of cases of malnutrition among young children may be attributed to a sub-acute tubercular infection not ordinarily correctly diagnosed.

Weaknesses in existing methods for determining and grading malnutrition by physicians were criticised, and an attempt made to list aids to diagnosis in the order of their relative importance, as follows:

1. Weight for height—the most useful tables are perhaps those which take the age factor into account also, as children stunted in height may not be detected by the simple weight for height relation.

2. Appearance, such as color, posture, nervousness, alertness or apathy.

3. The amount of fat.

4. The muscles of arms and legs.

5. Bony framework—wrists, breadth of shoulders and hips.

A belief in the overshadowing importance of attention to factors other than an unsatisfactory diet in combating malnutrition was voiced by more than one speaker. These other conditions needing attention and correction include: disease, and such physical defects as bad teeth, adenoids, tonsils, and obstructed breathing; irregular and rapid eating and gulping of liquids; faulty posture, over-fatigue, home study, and curtailed sleep, due either to reading in bed, sleeping with others, or to the presence of others in the room; maladjustment with the environment, and tension in the home atmosphere.

A plea was made for a broader training for the community nutrition worker than has been considered essential for the typical dietitian of the past, and it was urged that opportunity be given for practice work under supervision at a center where good standards for field work have already been established.

Several agencies compete for the responsibility of administering and directing child health activities:

1. Philanthropic and social agencies, having already the most intimate contact with the home, and experience as messengers of child health, might assume the chief responsibility and do consistent follow-up work from the pre-natal period on, bridging the gap between home and school and insuring that children be taken to physicians—all children for periodic examination, the physically defective for the removal of defects.

2. The future clinic with enlarged functions might assume chief responsibility, supervising the pre-natal period, insuring breast feeding and proper infant care, guarding the important pre-school and adolescent periods, and supervising both mental and physical hygiene, using philanthropic, municipal, volunteer, and school activities to assist in its work.

3. Educators with their ability to try out methods experimentally, pass judgment, admit limitations, and distribute responsibility for projects, might include the direction of child health activities among the functions of the school, justifying their leadership by the belief that one of the most influential messengers of health to the home and pre-school child is the school child himself when given the proper information and the proper impetus, and that the class-room method is an economical method for giving him this information and impetus.

It seems plain that many unanswered questions involve both technical knowledge (not solely medical) and an understanding of sound psychological and pedagogical principles. Such questions as the following must be answered:

What standards shall we accept in judging a normal child? What is the cause of seasonal variation in growth and what allowance is to be made for it in determining progress? In the formation of health habits what methods are practical in insuring that no lapses shall occur in the important formative period? How often should reports be submitted by the children? What supervision of these reports is necessary? Can any of this be delegated to the children themselves? Which methods of arousing enthusiasm are followed by a sustained interest, and which by a slump? What degree of permanency of health habits may be expected after intensive work has ceased? Is there any unexplained value in the "sipping" rather than the drinking of milk to explain the constant stress placed upon the former method by child health workers in spite of the clear demonstration by investigators^{2,3} that the latter method insures a much finer curd in the stomach? Is the 5 meals a day plan which works such magic in the case of the undernourished child a sound dietetic regimen for the normal child also?

The rapidity with which the child health movement has gained ground is due in no small measure to the very definiteness of the standards for judging malnutrition and for gauging progress in correcting this condition. This has had the effect at times of an overemphasis on normal weight as such, and a too great confidence that the whole problem is being adequately met if everything possible is being done to bring the underweight children of a community up to normal weight. There is such a great value to some definite objective standard for the purpose of testing the effectiveness of one's efforts and checking theorizing, that there is no reason for discarding these standards; but the time has come to examine them critically, and to consider the whole subject from the aspect of the greater importance of preventive work. We have assumed perhaps too much the attitude of the old man who exclaimed "Sick? I don't hold much with this being sick. What I always say is—if you're sick, *die*—and prove it!" The child welfare movement has said in

² Brennenman, J. Boiled Versus Raw Milk. *Jour. Amer. Med. Assn.*, lx (Feb. 22, 1913), 575.

³ Bergeim, O., Evvard, J. M., Rehfuß, M. E., and Hawk, P. B. Gastric Response to Foods, II. *Amer. Jour. Physiol.*, xlviii (May, 1919), 411.

effect to children—if conditions for your well-being are not satisfactory, become malnourished so that even our crude tests cannot fail to detect it—and prove it.

What is needed is a clearer conception of the meaning of optimum nutrition. For this it is necessary to go to the experimental laboratory where factors can be so controlled as to bring one factor at a time into sharp relief. So far, the clearest demonstration has been made for the effect of selection of diet as opposed to all other factors making for well-being. It has been shown most spectacularly how great may be the differences in degrees of nutrition, all of which would be classified by the uncritical as satisfactory. It has long been generally known that by changing the composition of a food mixture a diet which will not allow growth can be changed to one which allows partial growth; this, to one which promotes growth to full adult size. But it is not so well known that, depending on finer adjustments in the diet, this full adult size holds a number of potentialities: normal reproduction, sub-normal reproduction, or no reproduction at all; a long complete span of adult life or the shortening of this by any given degree; vigor maintained throughout this adult life or early coming of the characteristics of old age.

In the complex frequently changing conditions that surround human growth, it may be easily comprehended that the effects of finer adjustments in diet would long remain undetected, and yet they are coming to be more and more understood and appreciated. It is reported⁴ that the descendants of people of Iceland and certain Eskimo tribes, formerly possessing teeth which remained in perfect condition well into advanced years in spite of utter lack of any prophylactic measures, have shown deterioration of teeth coincident with a changed dietary. Investigators have shown that defective teeth habitually occur as an accompaniment of certain types of experimental malnutrition. The Forsyth Dental Infirmary of Boston is reported to be now frankly shifting its emphasis from the commonly accepted prophylactic and corrective methods of modern dentistry to the more fundamentally preventive measures of proper nutrition. A recent article by Mellanby⁵ cites the Island of Lewis in the Hebrides where, in spite of indescribably bad sanitary conditions, a strikingly low death rate among babies is recorded. That this is dependent upon the food of the pregnant and nursing mother and is

⁴ Private communication to writer by the Arctic explorer Stefansson.

⁵ Mellanby, E. Accessory Food Factors (Vitamines) in the Feeding of Infants. *Lancet*, cxcviii (April 17, 1920), 856.

not merely hereditary is indicated by the fact that the children of pre-school age in these homes, who do not fare so well as the babies dietetically, show a comparatively high mortality and morbidity. This again decreases as the children become older and do not suffer so greatly from neglect.

It would be painting too rosy a picture to suggest that all the factors upon which optimum nutrition rests are at present understood. However, much knowledge is already at the disposal of those who wish to apply it. Enthusiasm for the good results which follow the corrective treatment of defective teeth must not obscure the fact that better teeth, not better repair of teeth, is the real ideal. Absence of actual disease and underweight among children should not be accepted as the highest standard for which it is worth while to strive. The child health worker, submerged in the struggle to correct widespread malnutrition, which undoubtedly exists, must never lose the vision of optimum nutrition as the ultimate goal of achievement.

THE PRICE AND VALUE OF TEXTILES

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The correct labeling of foodstuffs is insisted on by law, but at present misleading statements are constantly being made about the composition and value of textile goods, while names used for inferior goods suggest a more expensive material; and the manufacturers have become so expert that the adulterations are difficult to detect on cursory examination. Consequently the public are constantly paying prices for materials far beyond their value, and are being deceived as to the actual composition of the goods. The question becomes more important day by day, for the price of clothing continues to soar, and the wearing qualities are becoming more and more unsatisfactory.

While there are firms whose word can be relied on, and who sell good standard materials at a reasonable price, their stock being chosen with the thought and care resulting from long experience and good judgment, there are many others whose materials are not labeled correctly or priced

according to their value. Presumably in nearly every case the salesman offers the goods in good faith, and sells the article for what he believes it to be—having obtained his information from the manufacturer or his agent—or, not having received any definite information on the subject, he uses his own judgment and knowledge, and that knowledge proves to be inadequate or insufficient. The salesman fails to realize that he is misrepresenting his goods. In addition to that, the price is fixed according to what he thinks the fabric is, and not what it really is.

An investigation was made lately into the composition and economic value of a small number of textiles, with the idea of finding out to what extent textile goods are incorrectly labeled, and if there is any relation between the price and the composition of the materials. Forty samples were obtained from four firms in Ontario, and were analyzed. The preliminary investigation showed that 6 samples, or 15 per cent, were not what they were sold for. An "all wool" flannel contained about 50 per cent cotton; a piece labeled "silk and linen" was over 80 per cent cotton, the rest being silk; another piece labeled "silk" was nearly 80 per cent cotton, the rest being silk; another piece labeled "silk and linen" was silk and wool in nearly equal proportions; another labeled "artificial silk" was cotton and wild silk; and one labeled "union silk and linen" proved to be more than half cotton, with the remainder artificial silk.

Occasionally the labeling may be to the disadvantage of the vendor instead of the buyer, for one sample labeled "a small per cent of wool" contained 37 per cent. Sometimes the labeling is too indefinite. Thus a "flannel" should be wool unless described as a "cotton and wool flannel." Viyella flannel contains about 50 per cent cotton.

The method of procedure was in every case to remove the finishing materials and loose coloring matters by boiling the fabric for 20 minutes in a 1 per cent solution of hydrochloric acid, then for the same length of time in a one-twentieth per cent solution of sodium carbonate, and lastly in water. The percentage of dressing was calculated on the air-dry weights. Air-dry weights were taken in this investigation, as in making the mixes the weight would include the normal amount of moisture held by the fibres. Duplicates were made in every case and showed that the error due to differences in the amount of atmospheric moisture in the laboratory from day to day was negligible.

For a cotton and wool mixture, the air-dry sample was boiled for fifteen minutes in a 5 per cent solution of sodium hydrate, the solution being kept at constant strength; the cotton residue was then washed,

restored to air-dry condition, and weighed. A correction of 5 per cent was added to the weight of the cotton residue, as the cotton itself suffers a slight loss on boiling with caustic soda (Matthews).

For a cotton and silk mixture, and for a wool and silk mixture, the silk was dissolved by immersion in cold concentrated hydrochloric acid (about 40 per cent strength). The residue was washed, dried, and weighed. A correction of 0.5 per cent was made for loss of wool and 4 per cent for loss of cotton (Matthews).

The separation of cotton and wild silk was carried out by immersing the fabric in cold 10 per cent caustic soda solution for 12 to 18 hours, then washing and drying at 100°C.; on rubbing, the wild silk fibres were disintegrated; the cotton residue was then allowed to become air-dry. Duplicates gave consistent results. Confirmation was also obtained by separating the warp and weft threads of cotton and wild silk, respectively, and weighing them.

The separation of cotton and artificial silk was not carried out chemically, but the warp and weft threads of cotton and artificial silk, respectively, were separated by hand and weighed. The results of the analyses are shown in the accompanying table.

Some interesting points were brought out by the analyses in respect to the price. In five all-wool materials the weights of wool obtainable for one dollar were calculated, and it was found that in one case (sample 3) the apparently expensive article was the cheapest in the end, for in this fabric one and a half times as much wool was obtained for the money as in the cheaper fabric. In another case, however (sample 4), the apparently expensive fabric proved to be really expensive, as less wool was obtained for one dollar than in any other sample. Sample 1 was a very thin serge which would easily pull out of shape, but the other two serges were a much closer weave and would doubtless wear much better.

Three union wool and cotton materials having approximately the same composition gave three different weights for one dollar—so that the prices were not consistent—though the difference may be accounted for to some extent by the difference in weave and finish. On the other hand, a number of satins, though of different price and width, worked out to be of about the same value. Again, two samples containing cotton and wild silk were compared and the one having more silk, which should be the more expensive fibre, was shown to be cheaper than the other sample.

The white flannel (sample 6) gives better value than any of the other materials grouped with it. While sample 8 contains a higher percentage of wool than does sample 7 the difference is not sufficient to account for the different weights obtained for one dollar. Sample 9 was a printed voile so that the extra labor involved in printing probably balances the deficiency in weight compared with 7 and 8.

In samples 10-21, there does not seem to be any comparison in the weights obtained for one dollar. Sample 10 has a high percentage of dressing, but is also made of poor quality shoddy which becomes thread bare quite easily,—and this probably accounts for the low price. Sample 14 contains less wool and more cotton than sample 13, but not enough to account for the difference in the weights obtained for one dollar, while 13 pulls more easily than 14. Sample 16 gives nearly twice as much weight for one dollar as does 13, yet the qualities appear to be similar. Samples 11 and 15 give the same weight and appear to be about the same wearing quality as far as one can tell from sample. Samples 17 and 18 are comparable and have about the same value.

Samples 22, 23, and 26 are somewhat similar in composition, but, while 22 is a plain weave, 23 is a poplin, which in all probability would not wear so well as 22, and only half the weight is obtained for one dollar in 23 and 26 as in number 22. Samples 28, 30, 31, and 32 are similar in value and composition; and sample 29, while having about the same composition, contains a high percentage of dressing and, even allowing for the extra labor involved in producing the watered effect, is expensive compared with them. The low value of sample 27 is also accounted for to some extent, though not entirely, by the printing.

Samples 34 and 35 are very similar in composition and value, though 34 has a much heavier and stronger appearance than 35. Samples 33 and 34 are very similar in quality as well as in all outward appearances.

The low figure obtained in the last column for sample 36 is due to the narrow width, and this makes the material more expensive than the other two samples.

A further point which needs to be made clear in the labeling of wool fabrics is whether the wool is "virgin" wool or "recovered" wool. There is not sufficient "virgin" wool in the world to meet the demand for wool clothing, and if the shoddy is carefully prepared there is no reason why it should not be used for textiles; but since it is not new wool, and is not quite as strong or as even as new wool, owing to the treatment to which it has been subjected, and is not usually evenly dyed, it ought not to be

sold at the same price as virgin wool—or even labeled “wool.” It should be labeled “shoddy” or “recovered wool” and priced accordingly. This would materially lower the price of “woolen” fabrics.

The need for the standardization of textiles is urgent, and the labels attached to the goods should show the nature and percentage of the fabrics present, and the price should bear some relation to the composition. It would be to the benefit of the retailer and of the consumer, for the public would feel that they were getting what they were paying for, and the retailer would retain the confidence of the public. At the same time, it is important that the interest of the buyers should be aroused sufficiently to ensure a demand from the public for “pure textiles,” that is, for textiles honestly labeled; and to this end it is hoped that the publication of this investigation will assist.

Results of analyses

SAMPLE NUMBER	VENDOR'S DESCRIPTION	CHARACTERISTICS	COMPOSITION	WIDTH	PRICE PER YARD	WEIGHT PER SQUARE YARD	WEIGHT PER LINEAR YARD	WEIGHT FOR ONE DOLLAR
			<i>per cent</i>	<i>inches</i>		<i>grams</i>	<i>grams</i>	<i>grams</i>
1	All wool serge	Serge	Dressing 1.5 Wool 98.5	36	\$1.49	127	127	85
2	Cashmere	Cashmere	Dressing 6.3 Wool 93.7	44	1.25	88	108	86
3	Serge	Serge	Dressing 4.0 Wool 96.0	48	2.00	160	213	106
4	Serge	Serge	Dressing 4.8 Wool 95.2	45	2.50	136	170	68
5	White flannel	White flannel	Dressing 10.3 Wool 89.7	28	1.20	153	119	99
6	White flannel	White flannel	Dressing 6.8 Wool 67.0 Cotton 26.2	29½	1.10	160	131	120
7	All wool flannel	Narrow striped flannel	Dressing 2.5 Wool 47.8 Cotton 49.7	30	1.00	113	92	92
8	Viyella flannel	Plain blue viyella flannel	Dressing 2.9 Wool 51.3 Cotton 45.7	30	1.25	115	95	76

Result of analyses—Continued

SAMPLE NUMBER	VENDOR'S DESCRIPTION	CHARACTERISTICS	COMPOSITION	WIDTH	PRICE PER YARD	WEIGHT PER SQUARE YARD	WEIGHT PER LINEAR YARD	WEIGHT FOR ONE DOLLAR
			<i>per cent</i>	<i>inches</i>		<i>grams</i>	<i>grams</i>	<i>grams</i>
9	Cotton and wool voile	Printed voile	Dressing 3.6 Wool 48.6 Cotton 47.8	29	\$0.65	70	57	85
10	Can. cotton and shoddy	Suiting*—plain weave	Dressing 8.7 Wool 37.0 Cotton 54.3	27	0.50	269	201	402
11	50% Can. wool	Suiting*—plain weave	Dressing 4.3 Wool 32.6 Cotton 63.1	28	0.60	190	148	247
12	Can. khaki, small per cent wool	Khaki*—plain weave	Dressing 2.9 Wool 36.8 Cotton 60.3	30	0.60	204	170	283
13	Wool and cotton	Serge—twill weave	Dressing 2.5 Wool 43.0 Cotton 54.5	40	1.50	102	114	76
14	Wool and cotton	Suiting*—gabar- dine	Dressing 3.2 Wool 35.8 Cotton 61.0	40	1.50	144	160	106
15	Cotton and wool	Suiting*—plain weave	Dressing 2.3 Wool 39.7 Cotton 61.0	42	1.00	211	246	246
16	Wool and cotton	Serge*—twill weave	Dressing 3.3 Wool 38.9 Cotton 57.8	44	1.25	144	176	140
17	Wool and cotton	Shepherd's plaid	Dressing 2.9 Wool 47.5 Cotton 49.6	50	2.00	164	228	114
18	Wool and cotton	Suiting*—twill weave	Dressing 4.7 Wool 49.2 Cotton 46.0	50	1.95	165	229	116
19	Serge	Serge	Dressing 5.7 Wool 42.2 Cotton 52.1	36	1.00	127	127	127

* Recovered wool, but of good quality.

Results of analyses—Continued

SAMPLE NUMBER	VENDOR'S DESCRIPTION	CHARACTERISTICS	COMPOSITION	WIDTH	PRICE PER YARD	WEIGHT PER SQUARE YARD	WEIGHT PER LINEAR YARD	WEIGHT FOR ONE DOLLAR
			<i>per cent</i>	<i>inches</i>		<i>grams</i>	<i>grams</i>	<i>grams</i>
20	Union tweed	Union tweed*	Dressing 5.8 Wool 45.3 Cotton 48.9	42	\$1.20	255	297	248
21	Cheviot	Cheviot	Dressing 4.5 Wool 51.3 Cotton 44.2	52	3.00	271	391	130
22	Cotton and silk	Cotton and silk, plain weave	Dressing 2.1 Cotton 87.6 Silk 10.3	34	0.50	43	41	82
23	Cotton and silk	Poplin—cotton and silk	Dressing 1.6 Cotton 89.8 Silk 8.6	35	1.75	80	78	44
24	Silk and linen	Silk and cotton, watered effect	Dressing 2.9 Cotton 82.0 Silk 5.1	35	2.50	98	96	38
25	Cotton and silk mull	Cotton and silk mull	Dressing 1.6 Cotton 83.4 Silk 15.0	35	1.00	37	36	36
26	Cotton and silk crepe	Cotton and silk crepe	Dressing 1.2 Cotton 86.2 Silk 12.6	38½	1.00	42	45	45
27	Silk	Printed silk	Dressing 4.1 Cotton 78.6 Silk 17.3	24	2.50	78	52	21
28	Satin	Satin	Dressing 4.8 Cotton 74.9 Silk 20.3	24	1.50†	138	92	61
29	Moiré silk	Watered effect	Dressing 10.7 Cotton 66.9 Silk 22.4	27	1.75†	79	59	34
30	Satin	Satin	Dressing 5.9 Cotton 70.2 Silk 23.9	54	2.50†	101	152	61

† Wholesale price.

Results of analyses—Concluded

SAMPLE NUMBER	VENDOR'S DESCRIPTION	CHARACTERISTICS	COMPOSITION	WIDTH	PRICE PER YARD	WEIGHT PER SQUARE YARD	WEIGHT PER LINEAR YARD	WEIGHT FOR ONE DOLLAR
			<i>per cent</i>	<i>inches</i>		<i>grams</i>	<i>grams</i>	<i>grams</i>
31	Satin	Satin	Dressing 7.3 Cotton 68.0 Silk 24.7	54	\$2.50†	101	152	60
32	Satin	Satin	Dressing 9.0 Cotton 68.9 Silk 22.1	24	1.25†	106	71	57
33	Silk and linen	Rep—plain weave	Dressing 2.8 Wool 50.9 Silk 46.3	38	2.50	81	85	34
34	Silk and wool	Henrietta—twill weave	Dressing 2.7 Wool 70.3 Silk 27.0	39	3.35	82	88	26
35	Wool and silk	Silk Eolienne	Dressing 2.0 Wool 70.8 Silk 27.2	40	2.50	59	65	26
36	Cotton and silk	Plain weave printed design	Dressing 4.2 Cotton 73.4 Wildsilk 22.4	34	1.00	50	48	48
37	Cotton and silk	Plain weave printed design	Dressing 5.0 Cotton 64.8 Wildsilk 30.2	35	1.00	54	53	53
38	Silk and cotton	Plain weave printed design	Dressing 3.7 Cotton 75.6 Wildsilk 20.7	36	1.00	52	52	52
39	Artificial silk	Poplin weave	Dressing 3.7 Cotton 66.0 Wildsilk 30.3	33½	1.75	66	61	35

FOR THE HOMEMAKER

COÖPERATIVE BUYING¹

HERSCHEL H. JONES

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As I look at the program of this conference and the subjects of this evening's session, I find myself wondering just what the person who put me down to discuss "Coöperative Buying" expected me to talk about. The term, "Coöperative Buying" suggests something in the nature of a cheaper system of buying goods, presumably based on the principle of concentration of purchasing power and volume of business. On the business of purchasing supplies, I am probably less qualified to speak than most of you. I prefer to assume, therefore, that your interest is primarily in the larger subject of coöperation, in the definite meaning of the word as applied to the coöperative movement originating with the Rochdale weavers in England. I would rather take my text from the keynote struck in the advance program of this conference, "the real work in any age is to produce, not better methods, but better men."

Coöperative buying may be any kind of collective purchasing. Coöperative spelled with a capital "C" is a movement whereby the people organize themselves in order to take into their own hands the administration of those socially necessary functions which are now administered by private interests for private benefit. It is a scheme of economic reorganization of production and distribution for the service of the people, rather than the profit of individuals. It was not first conceived by the Rochdale pioneers, but it was they who hit upon the right set of fundamental principles that spelled success.

Since that little store was started by those poor desperate weavers, seventy-five or eighty years ago, the coöperative movement has grown and spread over the entire world and is now making phenomenal progress in that last bulwark of individualism, our own country. The English

¹ Presented at the Conference on Group Living, Lake Placid, N. Y., May, 1920.

coöperative societies now include one third of the population of England. They operate sixty factories, and own their own coal mines, their own herds of cattle, their own coffee and tea plantations, fruit groves, and farms. One big wholesale agency distributes supplies of every kind to the local societies.

In Belgium the working people have, by the savings in their coöperative stores, been able to build their own halls for meeting and recreation, their own libraries, and to conduct all sorts of educational health and recreational enterprises.

All the world is just coming to recognize that the coöperative societies in Russia have been the one thing that has held together the economic life of the country during the upheavals of the last two years. There are 50,000 coöperative societies in Russia with more than twenty million members, who with their families comprise one-half of the population. During the revolution and since, amidst a complete breakdown of exchange finance and transport, almost the only purchasing and distributing of goods has been through coöperative societies. England, with the approval of the Allied Powers, offered to open up business relations with the Russian coöperative societies although she was still unwilling to recognize the government itself. The All-Russian Union of Coöperative Societies has been doing a large business with the United States for many months. It has the entire floor of an office building on Liberty Street in New York City and there are few offices in the city that have a greater appearance of efficiency and up-to-dateness.

The scope of the Russian coöperative activities is unlimited. There apparently are few things they do not do, and do successfully. Distribution of clothing and food is only the beginning. Circulating libraries, moving picture shows, lecture bureaus, schools, and universities, telephone and telegraph lines, road building, all are carried on by them. Mr. Alexander Zelenko, Director of the Information Bureau of the Russian Coöperative Societies in this country, with whom I had lunch recently, apologized for having to hurry away to a class at Columbia University. Out of curiosity, I inquired as to what course he was taking. "My wife and I are taking a course in camping," he replied. I expressed a little surprise that they should have time for this diversion. "Oh, this is business," he said. "We have recreation camps in Russia, too. The coöperative societies run them. We are learning everything we can about camp management and equipment so that when we go back to Russia we will be able to improve our coöperative camps."

In France the government gave over to the coöperative societies during the war the distribution of coal, milk, and meat in certain areas. In many districts all business is done through the coöperative societies resulting in the closing up of all competitive business.

In Italy, coöperation is also flourishing and as a reconstruction measure the Italian Government appropriated a large sum of money to aid in the establishment of coöperative organizations.

In the United States we have had for seventy-five years coöperative societies springing up in every part of the country, trying their experiments and going down in failure for want of access to accurate and adequate information. Violation of the principles of the Rochdale societies has invariably brought disaster, but some have survived their seasons of trouble and become permanent examples of strength to the hundreds of new societies that have come into being in the last five years. The latest available figures of a year ago show between 3000 and 4000 consumers coöperative societies in successful operation in this country. Several central wholesale agencies have been established in different parts of the United States, doing a total business of probably over \$100,000,000 per annum.

During the war people came to realize, as never before, the viciousness of the old economic system. In the last year, particularly, we have begun to see how absolutely we are at the mercy of the profiteering system of business. Our helplessness as individual small consumers in exercising any control over the conditions under which the necessities of life are supplied to us is parallel to the helplessness of the individual workman contending against a big corporation employer in an effort to secure better working conditions or better wages. The vision of our collective power as consumers through coöperative organization is beginning to dawn upon us. The greedy and despicable person who has been wont to wrap himself in the stars and stripes and interpret Americanism as the right of every individual to exploit his fellowman to the full extent of his ability and freedom from conscience can no longer pull the wool over our eyes. The bare problem of living, of food, clothing, and shelter has sobered us, has made us turn to the future with a determination to find better means of distributing the world's goods.

The workman is beginning to see that an increase of wages and a shortening of his hours does not solve the problem, because those things, he finds, simply add to the cost of commodities. They are passed on to the consumer and, inasmuch as the working people represent the major-

ity of consumers, it is the workingman himself who must pay for his own increase in wages.

The necessity and effectiveness of large scale organization, by the government during the war, for relief of distress and for providing things essential to life and health contributed to this new perspective on the old system of economics. That a new system based on standards of use and service is coming, has been recognized by such men as Mr. Frank Vanderlip, and Governor Lowden of Illinois, and people all over the country are turning to coöperation as the way out.

On the Pacific Coast there is in California the Pacific Coöperative League, 45 or 50 splendid societies, connected, many of them, with the Pacific Coöperative Wholesale Society with headquarters in San Francisco. Up the Coast at Puget Sound there is a wonderful coöperative movement started by a strong labor group. Around Seattle 40 or 50 well organized coöperative societies operate through a coöperative wholesale house in Seattle; societies occupied in all sorts of coöperative enterprises, not only storekeeping, but banking, laundry work, fish canning, recreation, and restaurants.

Coming east across the country to the middle west farming section we find large numbers of societies that began among the agricultural population. Coöperation in this country has been promoted particularly among farmers for the purpose of marketing to better advantage and throwing off the yoke of the exploiting middleman. These coöperative selling agencies naturally turned to the purchasing of seed and fertilizer and then to groceries, clothing, hardware and dry goods, thus becoming consumers' as well as producers' organizations.

In the Central states, around Illinois, are to be found a group of societies that have grown up among the mine workers, 70 or 80 of them operating through a wholesale society in East St. Louis.

In Superior, Wis., is the wholesale house of another group of 40 or 50 societies, mostly among Finnish people.

Further east, we find in Pittsburgh a coöperative wholesale surrounded by a group of 40 or 50 societies in Western Pennsylvania, Ohio, and West Virginia.

And then in New England is another group of societies just organizing a wholesale with headquarters in Boston.

In New York State and in New Jersey we have a considerable number of societies operating successful bakeries, stores, and restaurants. In New York City, coöperation has been particularly backward because of

the lack of stability and homogeneity of population. Our department has just completed, with the help of the Consumers League of New York City, a survey of coöperative enterprises in New York, which showed only about 20 really successful coöperative associations. One of these is the Coöperative Cafeteria started by Miss Mary Arnold on East 25th Street. Miss Arnold and a few friends opened the cafeteria themselves and then, as the business grew, put it on a coöperative basis so that the patrons themselves now own it. It has been so successful that they are planning to start others in different parts of the city. So complete is the system of accounting established by Miss Arnold that she is able to tell you the exact cost of the materials, labor, and overhead for each dish served. The scientific data that she is accumulating on the cost of serving food will be of great value to any institution.

There is a coöperative Jewish restaurant on Second Avenue in the East Side and a Finnish coöperative restaurant over in Brooklyn. There are two coöperatively owned homes for working girls, one of which is Unity House organized and run by girl members of the shirtwaist makers union.

An organization of Jewish women down on the East Side, called the Women's Consumers League, took up the question of the cost of living as applied to Kosher meat about two years ago. They went to the Food Administration with their complaints. They were courteously listened to, finally, by the Chairman of the Food Board himself, and inspectors were sent out to investigate. But as the weeks went by they found themselves no better off than before and they came back to the Chairman, Mr. John Mitchell. After hearing their story of the way the butchers continued to exploit them, Mr. Mitchell sat back and told them of how in his youth the coal miners of Illinois were robbed by the company store and how the miners made up their minds to have their own stores and stop all profit making in the handling of their supplies. "Why don't you do the same thing," he asked them. They went away. Nobody at the Food Board heard of them again until three months later it was learned that they had opened a coöperative butcher shop. They started with 300 members. Now they have 1200 members and are operating four branch stores. Their prices are from two to four cents per pound cheaper than prevailing retail prices and the savings are returned to member buyers at the end of the year, in proportion to the amount of their purchases.

Among the most interesting coöperative undertakings in New York City are two coöperative apartment houses built and owned by Finnish working people in Brooklyn. One was completed before the war, and the other shortly after it began, so that material cost them less than now. The men, who are mostly carpenters and painters, built the houses and paid themselves wages. Each family put in \$500 and loaned as much more as they could. The Finnish Coöperative Bank of Fitchburg, Mass., helped out with further loans. Only the most substantial of materials were used. Now these families are living in five and seven room apartments, light, airy, sanitary, attractive, with tile floors in the bath rooms, tile under the kitchen range, a little safe in the wall over the sideboard for the family savings, hardwood floors, intramural telephone, everything necessary to comfort and health—all for \$22 to \$27 a month. Nothing like it could be found in Manhattan for less than \$80 or \$100. And this small sum includes paying off the principal in ten years, as well as operating expenses. Here is a lesson for those who seek to solve the housing problem. These same people with their neighbors are now building a \$60,000 bakery and coöperative store in the same block.

If not for the risk of too many details I would speak of the coöperative stores of the New York City Post Office employees, doing a business now of over a million dollars a year; of a coöperative knit goods factory where there are no labor troubles and no bonus system is needed to stimulate production; of three coöperative preparatory schools owned by the students themselves; of a wonderful coöperative summer resort purchased and operated for its members by the dress and shirtwaist makers union.³

The story of the Purity Coöperative Bakery in Paterson, N. J., is also full of interest. Then there is the Utica Coöperative Society in Utica, N. Y., which is now doing a weekly business of over \$2300 and has recently moved into a new store building of its own and is building a new up-to-date \$21,000 bakery. Fitchburg, Mass., is a center of coöperation—coöperative milk distribution, grocery stores, dry goods stores, a bakery, a bank, a social center, an orchestra, a restaurant, a boarding house for unmarried people. Their solution of the milk problem is especially worthy of note. The milk supply of Fitchburg grew continually worse. The farmers got so little from the dealers that they could not afford to produce clean milk and many of them were

³ The State Department of Farms and Markets is publishing an illustrated pamphlet, describing various coöperative organizations in New York City, which will be available for distribution in a short time.

killing off their herds. The coöperative society made a survey of the field. They made the farmers a proposition of eight and a quarter cents a quart, instead of the seven and three quarters cents paid by the dealers. They sent their trucks after the milk, brought it to their own pasteurizing station and delivered it to the members of the society, with a profit, at fifteen cents a quart, three cents less than the private dealers had been charging. They have now put practically all the private dealers out of business.

In the adjacent town of Maynard, Mass., a coöperative society sold the same milk at thirteen cents a quart, which covered the whole cost, while those who did not belong to the society paid 18 cents and 20 cents to private milk dealers.

New coöperative enterprises are being started in New York State nearly every week. The problem now is not to stimulate interest but to see that the new associations get organized on a sound basis and avoid the mistakes that lead to failure. The New York State Department of Farms and Markets has a Bureau of Coöperative Associations, with a small staff of organizers, whose function it is to assist consumers and producers coöperative associations in preparing and filing their articles of incorporation, in drafting their by-laws, in planning their activities and in solving their marketing and buying problems.

What are the principles essential to coöperative success? First, that each individual who enters into combination with his fellows shall make a personal contribution of some kind, shall put in a certain minimum amount of his own money. Second, that, irrespective of the amount of capital put in, each member has one vote and no more, which differentiates coöperation from private business enterprises where capital votes, and not human beings. Third, funds invested in the coöperative enterprise shall earn not more than a fixed minimum rate of interest, never higher than the legal interest rate. Fourth, any profits accruing to the coöperative organization shall either be used for the social good or returned to the members in proportion to their patronage. Fifth, business must be done for cash only, or its equivalent. Sixth, goods must be sold at approximately current market prices, not at cost, and adequate reserves maintained for emergencies, for expansion, and to cover depreciation. Seventh, education in the principles and aims of coöperation with the view of expansion into larger fields should always be carried on in connection with the enjoyment of the immediate economic advantages.

Coöperation is after all merely democracy and Christianity applied to production and distribution. Political democracy and personal Christianity have ceased to be primary issues in modern life. They must be applied to the economic field if they are to maintain their significance. The crying need, therefore, is education. We cannot have coöperation in the United States faster than we can create coöperators. Groups of people who get together and organize a society for the purpose of beating the high cost of living, who do not study coöperation, who do not make themselves familiar with its purpose and its philosophy are really not running a coöperative society. Store keeping, or mere pooling of purchases, is not coöperation. The coöperative movement is a movement of social reorganization. It is revolutionary in its possibilities, but evolutionary and non-political in its process.

A "SUBWAY" BAKERY IN VERDUN

An underground bakery furnishes all the bread used by the refugee population in the ruined city of Verdun. No other building was sufficiently undamaged to house a bread baking establishment for the returning townspeople, so the great "subway" ovens are daily turning out long, crisp loaves which compose the principal food of those toiling among the ruins.

Several times each day the bread is brought to the mouth of the black cavern beneath the great walls, where lines of people await their rations.

The bakeshop is a part of the famous underground city of Verdun, built after the war of 1871 and designed to house 30,000 persons during an attack. During the Great War, thousands of soldiers and a few refugees lived in this subterranean abode while the city was under fire for nearly five years. The bakery was in operation during the whole time.

ONE WOMAN'S SOLUTION

HESTER M. CONKLIN AND PAULINE D. PARTRIDGE

On the edge of the desert of the Colorado not far from Signal Mountain, in the Imperial Valley, where the heat rises in great throbbing waves from the white sand and the only water to refresh the burning land is that which runs in the irrigation ditches, stands a tiny bungalow in a field of alfalfa, like a toy house on a great green mat.

In this climate a woman rarely braves the summer months. By late April or early May the mother and her little family leave the Valley for the cooler land beyond the mountains or for the Pacific shore a hundred miles away. The men must stay, for the bulk of their work is done while the thermometer registers around the hundred mark, but, no matter what the separation may mean in hardship or deprivation for themselves, somehow it must be accomplished to keep the women and children well and happy.

This little cottage, however, has a different story to tell. There is a woman in the doorway for one fleeting moment, the white muslin curtains seem to be fluttering in a breeze which is a stranger in this desert country, and the laughing voice of a child rings out in the still hot air. Within the cottage contentment reigns, and an almost unbelievable coolness. There is a breeze, but where does it come from? Fans, fans everywhere, run by electricity, and reducing the temperature from twelve to twenty degrees.

It is wash day and the electric washing machine is running. By this method Mrs. Hall does the family laundry work in a short two hours, with no additional heat and little extra labor. An electric mangle takes care of the larger flat pieces which are ready for it as soon as they have passed through the electric drier, and the electric iron completes the work. The range is also an electric one, efficient and exact. Electric lights are to be found wherever they are most convenient, one over the stove, and one near the sink. It is plain to be seen that Mrs. Hall has marked each spot where formerly she had wished that a light might be. An electric dish washer removes the drudgery of the three meals a day, and a vacuum cleaner run by the same method keeps the little bungalow sweet and clean. An electric refrigerator and ice cream freezer supply what could never otherwise be enjoyed in this climate, and a bread and cake mixer run by the same power make home baking as simple as home laundering.

An enumeration of all the electrical appliances which are used by this one woman to enable her to remain in her home with her husband and children through the season when the Valley is, save by a miracle, uninhabitable by women would be too long to be of interest, magical as these might seem. Suffice it to say that they have accomplished their purpose; that she has not been obliged to be separated from her husband for several years; that her children are well and happy, her home clean and well administered, her food delicious and her life far from monotonous.

But where does the electricity come from, out in the desert, miles from anywhere?

It is supplied by an electric plant installed in the house at a cost of about five hundred dollars and run by a low fuel motor. Details are unnecessary, for any electrical company can supply them.

The cost of two women to assist in the work of this household, and this would be no more than adequate, would be at least ten dollars a piece per week, making a total of one thousand and forty dollars a year. Add to this the board of each at four dollars a week, a low estimate in these days of high costs, particularly in a region where food must be brought in under difficulty, and altogether you have nearly fifteen hundred dollars a year, the price of domestic service. Perhaps if this were perfect, it would not be too high a price to pay, but remember that only the most unskilled labor will betake itself to a place where the "movies" have not yet penetrated, that there is almost constant change with periods when no assistance is available, and that under no circumstances can flesh and blood be asked to do the tasks easily accomplished by machinery. Furthermore this fifteen hundred dollars must be paid out again next year for the same unsatisfactory result,—not for an investment, but for running expenses. Fifteen hundred dollars put into an electrical plant and equipment is as much of an investment as the home itself, and once invested, the upkeep is small in comparison with the resultant freedom and comfort.

Are there not many homes, even in less isolated districts, that might find in this "obedient servant" at least a partial solution of their "labor problem?"

EDITORIAL

Vegetables Again—Their Fat-Soluble Vitamine. More and more the evidence is increasing as to the value of green vegetables in the diet. Quantitative work on the fat-soluble vitamine has recently shown this strikingly. Osborne and Mendel¹ have fed their rats diets rich in every respect except the fat-soluble vitamine and supplied the latter in small amounts of various dried vegetables, watching to see whether the small addition would permit good growth. As little as 0.1 gram daily of dried spinach, alfalfa, clover, or timothy, was satisfactory; cabbage was not so good; tomato was excellent. One remarkable observation was that 0.1 gram butter fat was no better than the dried vegetables and in some cases not so good. The latter may in fact contain more fat-soluble vitamine than the butter fat. It seems to be stable toward heat, at least in vegetables, and not extracted by water. It is interesting to realize that this dietary necessity may be obtained as freely from a serving of spinach, even with its high water content, as from a serving of butter.

Osborne and Mendel fed not only the dried vegetables, but also the green oil extracted from them by ether. They obtained 3 per cent of this, for example, from dried spinach and 4.1 per cent from dried green peas. The minute amounts of 0.42 mgm. of this grass oil daily or 0.66 mgm. spinach oil started growth again in rats that were declining in weight because of lack of the fat-soluble vitamine in their diet, and cured cases of the characteristic eye disease.

It seems now as if we were getting nearer to knowledge of what this fat-soluble vitamine is. Methods of extracting it from the vegetable by solvents, like this ether extraction of Osborne and Mendel's, concentrate it in a way favorable for further investigation. Steenbock and Boutwell² have tried various solvents on dried alfalfa, carrots, and maize. They found, of course, that they could obtain most vitamine from alfalfa and least from maize, since previously experiments had shown

¹ Osborne and Mendel, *Jour. Biol. Chem.*, 41, 549 (April), 1920.

² Steenbock and Boutwell, *Jour. Biol. Chem.*, 42, 131 (May), 1920.

maize to have only about one-seventeenth as much as alfalfa. Water was the least and alcohol the most satisfactory solvent.

A particularly striking part of their work is the fractionation of their alcohol extract of dried alfalfa. This green extract, rich in vitamine, they saponified with alcoholic potash in the cold for many hours, thus decomposing the chlorophyll which is an ester, but not affecting the yellow coloring matters associated with the chlorophyll. Ether extraction after saponification gave an orange-red substance which successfully supplied the rats with vitamine. This, by different solvents, they further separated into two fractions each containing one of the two yellow coloring matters, carotin and xanthophyll. The carotin fraction contained the fat-soluble vitamine in large amounts, the other little or none of it. This seems striking confirmation of Steenbock's earlier hypothesis that the vitamine is at least closely associated with the yellow carotin.

THE QUESTION BOX

Question: Will you please write me whether or not vinegar made from vinegar bees is at all injurious to health? People in this vicinity are making vinegar by the gallon and the pupils have brought some of the bees for me to use in making vinegar in our cookery classes and I wish to know more about them before encouraging their use.

Answer: The product sold as "vinegar bees," "beer bees," "wine bees," "Australian bees," and under various other names is only a wild yeast of little value. Extravagant claims are made for the product, and a fancy price out of all proportion to its original cost or actual worth is asked.

The primitive process for making "bees" was to expose to the air a mixture of corn meal and molasses until it became impregnated with wild yeast and bacteria. This ferment was used in making a sort of vinegar or certain alcoholic solutions by adding it to a mixture of water and either brown sugar or molasses, which was then allowed to work or ferment. In the judgment of the specialists of the Department of Agriculture "bees" is not as well suited for fermentation as is the ordinary yeast cake which can be obtained from any grocer at much less than the fancy price asked for "vinegar bees," and they can not recommend "bees" at all for making vinegar.

The *Weekly News Letter* of May 28, 1919, contains a full statement in regard to vinegar bees.

THE OPEN FORUM

Tirana, Albania, March 5, 1920.

My dear Mrs. Norton:

A courier from Paris recently brought me half a dozen copies of the JOURNAL, and as I have not had any copies for nearly a year, it made me feel as if I were once more in touch with civilization. Although I have been in the Balkans less than six months, I feel as if I had been away from ordinary life for a year or so. Albania is the most primitive of the Balkan States, and Tirana is the center of the old Turkish regime and nearly as oriental as Constantinople. So it is really a privilege to be here and see it all, and I have wondered if some of the experiences I am having might not be interesting to the JOURNAL readers.

My duties here are to run the personnel mess and teach in the Red Cross school and the Albanian girls' school, and I am planning to take a class of mothers. I have also taken upon myself a class in English for several of my most promising boys.

First, as to the mess. We average only about forty-five, but are rarely without guests—Italian and Albanian—and as this is Headquarters for Albania, all new personnel and all personnel going home or on leave or changing from one station to another must pass through here. So it makes a very shifting family. When I came the Colonel told me that I would have a fund at my disposal and that he wanted everything to be the best possible, as we must all eat three meals every day in the mess with no chance of going outside for variety. Then I went out and looked at the kitchen. When I first went in I thought there were at least a hundred people there. The Italians are occupying this part of Albania, and they had loaned soldiers to the Commission for all kinds of work. It was very good of them, but led to our feeding half the regiments on duty here. We had a head-cook and assistant, two K. P.'s, two bakers, and four waiters, and a barber, besides three paid Albanians. Then there were several friends, and two pet chickens, three dogs, and a cat. And the kitchen was only about fifteen by fifteen. It took me a day or two to get them all placed.

When the Commission first came in they had so much to do that they were glad to accept any offer of assistance. They found a merchant here who spoke English and who offered to do all their buying for them. They made a contract each month stating the prices to be paid and stipulating that these goods were not to be bought elsewhere. Goods were

to be paid for every week. This was a very easy arrangement, as the assistant was at the kitchen door constantly, and every time the cook needed half a pound of anything he only had to tell Met, and it came in five minutes. When I first came, not knowing a word of Italian or Albanian, I let this system run for a couple of weeks until I got my bearings. But I used to take an interpreter into the bazaars and find out things, and it did not take me very long to see that we were being cheated at every hand. So at the end of the month I cancelled all the items on the contract except meat. I wanted to cancel the entire contract but was urged not to, as this particular merchant was a very powerful one in Tirana and could make us trouble. However, trouble came immediately, but in a form I had not expected. All of my help objected, saying that Zef had given them a percentage of his earnings and they wanted that continued. It meant a readjustment of all the help. The head cook went back to his regiment and I found a Turk who has been splendid. He speaks Turkish fluently, a very little Albanian, and a few words of Italian. But we understand each other now absolutely and hold long conversations. It is wonderful how much one can get across by the sign language. He has told me much about Constantinople. He worked there in the household of a Prince and went to Austria in his employ. Then he drifted away and became attached to the Prince who was sent to Albania by Germany to be king here. The prince's reign was short, and when he left Osman staid and opened up a restaurant in Durazzo. He was commandeered by the Austrians, and when they left he went into the employ of one of the Beys here in Tirana, and left him to come to us. He promises to stay with the Americans as long as I stay, and wants to come to America with me. Incidentally I should like to bring him, and if I can get his passport fixed up I shall. It would be easy for him to find work in America. He is a wonder as a cook, and here we pay him five hundred lire a month, which amounts now to about twenty-five dollars. He works from seven in the morning to eight-thirty or nine at night. He was sick twice since I have had him, and I managed to get him to lie down for a couple of hours only, but he was so worried about us that he would come trotting back to see how things were.

I am afraid that I shall be spoiled as to the help problem when I come back. We have to turn away people continually who would like to work for us, and the ones I kept have come to be loyal and good. I have found that it pays to take one of the native Albanians rather than an interpreter into the bazaars with me. Our interpreters are all boys who

had immigrated to the States and then came back when the war started, and they are pretty well spoiled as far as actual work is concerned. They are anxious to prove to the native Albanians that they are better, and also, I fancy, they want to impress on them what a rich country America is, so they think it is degrading to try to beat down prices. As the natives always ask a fabulous price for every article, knowing that no one will pay it and looking forward to the sport of the bidding, I was losing money with the interpreters. Now I think I am spoiled as far as buying is concerned. I dread to think of the breaks I shall make when I go to Field's, for instance, and price something and laugh at the clerk and turn my back on him and over my shoulder tell him my price. I think I shall be arrested. And yet that is our custom here. I go to the same people time after time, and, although they know me now, and know that I will never pay the price they ask, it is always the same farce, and they seem to enjoy it just as much. What is more, the Albanian boy I take keeps me at it. Even when I buy of his father, he makes him come down in price. Often now I send him alone and he comes back with good things at fine prices.

Everything is sold by weight or number. We count the oranges, lemons, and eggs, and bunches of spinach or onions, but meats and other vegetables are weighed. The standard is the "oke" which is almost a kilo and a half, or about three pounds.

Meat is the thing with which I have had the most trouble. The animal is killed and sold and the flesh eaten inside of an hour or so, and the dealers know nothing about the cutting of meat. In the meat market I gasped, for I could not see a single cut I could recognize. There were hundreds of little scraps, each weighing possibly a pound. Nothing is wasted in these markets. All the intestines are cleaned and sold and eaten *per se*. You see people going through the streets carrying a couple of yards of stomach and intestines. I found it was necessary to pick out my animals and go away a few minutes while they were killed, and then come back and show what parts I wanted. (I never knew I could be a butcher, but I find it is not so hard.) In this way I could be reasonably sure of the health of the animals, as well as obtain the cuts I wished. I have to buy ahead and keep the meat a few days. I had a cabinet built, screened on all sides and placed where the winds strike it day and night, and all my meat goes there. Of course we have no ice, and I dread the advent of summer. Our days already are warm and balmy, all the fruit trees are in blossom and planting has been going on for a month.

Tirana is so largely Mohammedan that pork is never sold and I must send to Durazzo for it, but we have now any number of baby lambs for sale. Lambs that would bring fancy prices in big markets go for the same price as old beef. The value of the lire has dropped so we pay more than we did, but it amounts to sixty-five to seventy cents an oke, or about twenty to twenty-five cents a pound.

The chief foods of the better class Albanians are poultry, eggs, rice, cakes, and very sweet puddings made of rice flour. For the poor it is only corn bread and goat cheese and the worst cuts of meat, a very few eggs, and very strong leeks, and all the foods are so seasoned with goat fat as to be uneatable. I went with two of the nurses on a mobile unit some time ago. We went up to a mountain village and lived at the home of the one Bey for three days. The first day we could eat; the second day we all felt pretty sick, but kept the food down; but the third day we unanimously went outside and lost each meal. We had to eat—all the family stood around and watched. It was a harem, of course, a father and three sons, each having two wives while one had three. Altogether there were about forty in the immediate family. And it seemed as if each wife had vied with the others to entertain us. We had to eat it all or cause strife.

In my classes at the schools I use only such articles as are inexpensive and plentiful. The Italians have influenced the markets largely, bringing in quantities of delicious oranges and apples and good potatoes. We get dates, figs, and nuts from the south and east, and onions, cabbage, and leeks are locally grown. But the people have no idea of preparing them. Such simple dishes as baked apples, creamed onions or potatoes or a poached egg leave them aghast. And when I showed them an omelet, a fruit salad (with apples, nuts, oranges, and dates) or a fruit whip, the children went into ecstasies. I am anxious to make some impression on their homes but most of the children are from the very poor families, and the poorest homes here consist of one room which is a combination kitchen, dining room, bed room, chicken roost, and stable. Their cooking arrangements are simple—one iron pot on a smoky fire in the center of the room. Anything that must be cooked in an oven must be sent to a bakery. The bake ovens are huge brick affairs. The fires are built on the floor of the oven, and when it is well warmed up the coals are either pushed to one side or raked out altogether. And then in goes the bread belonging to the baker himself, several lots of corn bread belonging to various neighbors, a few dishes of eggs baking in goat fat, and perhaps

a turkey or chicken. The poultry is always boiled first (strange to say, no one ever thought of making soup) and then the bird is well covered with goat fat and browned. The result is rather awful. There is so much for them to learn, that I sometimes wonder if the little bit I can give is worth the time and energy I put into it. But at any rate it will not hurt them. As for my class of boys in "American," it is wonderful how quickly these people learn a language. I have one man who speaks French, Italian, German, Greek, and Turkish besides Albanian. Most of the people have a working knowledge of German since the Austrian occupation, and they have picked up some Italian in this past year of their stay, so they have a good background. The native language is of Slavic origin, but there are many Latin touches. The numbers from one to ten are "ni, du, tre, quatre, pess, joust, stat, tete, non, thet." Of course they do not spell them so; their spelling is like Russian with all sorts of unexpected double consonants. I admit I cannot learn their language, but I can buy without an interpreter.

The Commission here has accomplished a great deal in opening the eyes of the people. The very fact that we women come and go in company with the men of the Commission or Italian officers or some of the educated Albanians, and go unveiled, means a lot. Many are the women here who have never left their houses since they were married, and to them we are unbelievable. Then, too, we must have clean quarters, and beds and tooth brushes and we sit down at a table to eat and use knives and forks and do a thousand and one things differently, and it is bound to make an impression. Of course the women in the better class families in the cities go to Italy and Constantinople, and they go unveiled when in other countries. But the majority are bound by iron-clad rules. And yet sometimes we wonder if we shall give them enough happiness from our civilization to compensate for their childlike satisfiedness in their present lives. As it is they have done all that is necessary when they marry at fifteen and bring all the children into the world they can and knit and make homespun and help their men. The women here—as in the other Balkan States—are the toilers. The men are warriors. The one day in the week when women come into their own is Thursday—market day. They come in week after week with the same things for sale, and sit all day and talk. It matters not whether they sell, in fact they seem loath to part with their articles. Having something for sale is their excuse for coming out. In our small American towns the women come out for the Sewing Societies at the Churches, and for the Literary

Societies. Here, since women have no souls or brains, they cannot go to church and have no call to learn to read or write, so they come to market. Civilization is pretty much the same the world over.

This letter has become longer than I had expected, but when we start to write it is hard to know when to stop. I am enclosing several pictures. Two of them show market day scenes, one is of the street in front of our office, showing two city officials in the foreground, and the other is one of my domestic science classes. The girls made their own uniforms and are very proud of themselves.

Just a personal note at the end. Perhaps you remember me when I was dietitian at the Cook County Hospital in Chicago and you were dietitian for the County Institutions? I was ill and had to give up, and I went west and remained until I went into the army more than two years ago. I was at Riley until August and then came overseas and was in France until shortly after the Armistice when I was sent up into Germany. Then after more than nine months in Germany, I came here in October last year, so I really am fortunate as to my experiences.

Sincerely yours,

NELLIE HALLIDAY,
American Red Cross Commission to Albania.

The Constantinople Fund. All summer schools are urged to take up a 25 cent per capita contribution from students in home economics for the Constantinople College Fund of the American Home Economics Association. This fund is being raised by a committee of which Miss Marlatt of the University of Wisconsin is chairman, and up to July first \$4800 was in hand or pledged. The remaining sum of \$1200 can readily be raised if the summer schools of home economics will make the 25 cent contribution which was given in normal schools and colleges during the year. The fund will be used to establish a department of home economics in the Constantinople College for Girls which it is expected will serve as the foundation of a great school of practical arts for women of the Near East.

B. R. ANDREWS,
Chairman, International Committee.

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HOW CAN OUR WORK IN FOODS BE MADE MORE VITAL TO THE HEALTH OF THE CHILD?¹

LUCY H. GILLETT

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Seven years ago as a member of the teaching profession I was feeling the need of closer application of subject matter, as taught in cookery classes, to the needs of the girls in their homes. This feeling had grown gradually during several years of teaching, first of children from 7 to 16 years of age, then of students who in turn were preparing to teach.

At first I had been gratified and perhaps satisfied, if Mary said she had made biscuits for supper, if Jane had made soup, or if Harriet had made gingerbread, but these isolated dishes did not cure nor prevent pale faces, they did not develop strength in the girls that were weak, they did not help those who were slow in their grade work to concentrate better in the class room. One glimpse after another into the home life of the girls only served to strengthen the impression that they were getting much they could not apply and that this was crowding out much they needed to apply. What was it that they needed?

This constant question stimulated a desire to embrace the first opportunity for getting more definite knowledge of the actual needs of the children. During the last six years I have had this opportunity, an opportunity to study conditions in families where there are children of school age, where there are tubercular or malnourished children, and in almost

¹ Read before the Annual Meeting of the Eastern Arts Association, April, 1920. To be published in the *Proceedings of the Eastern Arts Association*.

every one of these families there is a food problem. While the food is not always the only problem, it is usually a very important factor. This study has made me feel more strongly than ever the gulf that lies between the person sitting in an office deciding what 300 children should need in ideal homes and what 300 children actually do need to help them in the homes in which they are now living. This paper is written, therefore, not in a spirit of criticism of anything that is now being done, but rather to give to those who feel the need for, but are not able to get first hand, suggestions which will help them to adapt their work to present day needs.

It is surprising to find underweight and malnourished children in all types of families, in the families of those who have plenty of money as well as in families of limited means. One cannot judge by the appearance of the face. The physician frequently finds that a plump rosy face is supported by a malnourished body. Figures from various cities show 20 per cent of the children underweight, and underweight is not the only index to malnutrition. In many instances the children are in good condition until they reach the age of 12 or 14, when they begin to get thin and pale, and are more susceptible to disease than they should be. This seems reasonable to expect unless the amount of food eaten by these children increases to correspond to the rapidity of growth.

In families where we have been asked to make suggestions concerning the food, mothers frequently tell us that children are getting on much better at school after the food has been adjusted. Does the work as taught in the cookery class help the children to concentrate and to study better? Does the class room teacher note a mental improvement in any of the children who are taking cookery?

Every teacher of foods is doubtless emphasizing the relation of food to health but is it in the concrete or in the abstract? Do girls know that the enthusiasm and freshness of youth which every girl wants may be maintained or destroyed by her daily habits of eating? Rosy cheeks and good teeth are in a large measure dependent upon the food eaten.

One of our Simmons students, a young woman with every appearance of being in good health, was doing some field work through the Bureau. She was trying to convince the mother of several thin and sickly looking children that they should not be allowed to drink coffee. Finally the mother said "Do you drink coffee?" and the worker replied, "No, I never touch it." The next day the mother told another worker who was in the same family that she was not going to give her children coffee

any more because she wanted them to have red cheeks like Miss B——. In the first place then, are we living examples of what we want our pupils to be?

Does each girl know whether she weighs more or less than she should so that she may regulate her diet accordingly, or whether her brothers and sisters are of average weight? If not, is there some physical defect that should be remedied so that the food may do its work? I do not wish to suggest that the cookery teacher is responsible for the physical condition of the children, for she has neither time nor training; neither is it her responsibility. This distinctly is the problem of the nurse, the physical director, or the doctor, but the relation of food to health and its selection with health in mind *is our* problem and we do not want to waste time trying to build up, with food, conditions that are due to other causes. The work in foods provides an excellent opportunity to work in coöperation with the nurse, the doctor, or the physical director.

In social work we are meeting in individual homes the problems in nutrition that teachers are meeting in group work. In one of our nutrition classes where we were trying to bring 12 or 15 underweight and malnourished girls into good condition by teaching and persuading them to follow proper food and other health habits, the girls said, "We have had this in school but it never occurred to us that it had anything to do with our being underweight."

My second thought is to ask whether it is not possible to make the work more personal?

In teaching a cosmopolitan group such as we get in our public schools we must decide which things are fundamental and at the same time most useful. We want such information as may be taken home, not only the kind that is taken home in a cup, but the kind that will help to lay a good foundation for the health and strength of the whole family, the kind that may be used in the future as well as the present, the kind that applies to all nationalities.

Has any teacher ever said that there is not time to teach everything? There is a big question in my mind as to whether there is time in the grades to teach girls that foods are composed of proteins, fats, carbohydrates, mineral elements, vitamins, and water. These are surely fundamental facts, but are they the facts that can be used to best advantage?

I know from experience that children delight in learning these names, that they can tell in a superficial way the value of each in the body; but if you were to go into the homes of any one of these women today, to see what application she really makes of this information when a real test arises, I wonder whether you would not be forced to agree with me that in the face of so many needs the time might be spent to better advantage? That the information gained does not justify the time and energy spent upon it? I would like to raise the question whether the technical composition of foods could not be left to the high schools where enough time may be put upon it to give a working knowledge and where the children are old enough to apply the knowledge intelligently? Some may say that so few go to high school they want them to get it in the grades, but if we cannot give them everything in the grades, and if this crowds out things that are more important, are we not forced to eliminate something and put the emphasis on the question of value? We cannot teach chemistry or advanced mathematics in the grades. Why food composition?

Perhaps a teacher feels that she is simplifying the teaching of food values and evading the difficulty by classifying foods into muscle builders, energy foods, body regulators. In this it seems to me we are easing our conscience and fooling ourselves without educating the children. In the first place, are we really giving the correct impression by referring to a certain class of foods, presumably high protein foods, as muscle builders? Is the protein of any value in the growth of the muscles if the mineral elements and the vitamins are not also present? Are they not just as important in the growth of the muscles as the protein? Children soon assign values of their own, too, in spite of our cautions. They reason like this: If protein builds good strong muscles, then is not that the thing to be desired? And if the time comes when they have to economize, will they not think the protein the thing above all else to include because of muscles and strength? In 100 dietary studies in which accurate records were kept and the food values of the diet were calculated, in no instance was the protein deficient if the energy was adequate, but the things that were deficient, the thing that was holding boys and girls back in their development, the thing that was causing pale faces and weary bodies, was the lack of the mineral elements and the foods containing vitamins. We find malnutrition more frequently in children whose diets are rich in protein and low in vegetables than where protein foods are deficient and vegetables abundant. Why overemphasize protein foods by referring to them incorrectly as exclusively muscle builders?

What are the important things of common interest? Are they not the teaching of the relation of food to health, the planning of meals for a family to include the desired foods necessary for health of each member, a consideration of economy and marketing, and the preparation of the foods that illustrate these points?

We all need milk, vegetables, fruit, grain products, and fats, normally. (Abnormal cases are problems for a physician.) Meat, fish, sugar are optional. Why not think in terms of types of foods, and teach the planning of meals to provide these foods, the different foods to use at different seasons of the year, the amounts of each type of food needed by each member of the family for a day and then for a week to make up the weekly grocery order, the purchasing of these foods, the relative economy of each food as compared with other foods in that type?

This will help to solve the difficulty that often arises because of nationality. People of all nationalities, of all ages, and of all occupations need these same types of foods and from each type may be selected foods preferred by each. Take vegetables, for example. When the question of nationality arises one could find from the surrounding markets and shops or from the members of the class the names of the vegetables used by the nationalities involved and these might be brought up in class. Vegetables of a similar nature might be classed together and rules for the cooking of each class given. This would help all nationalities and so called Americanization would be spread thereby. Each nationality could learn from the other and neither would feel that it was having something forced upon him. By showing respect for and acknowledging the good that is in all diets there is sure to be an interchange of food habits which will be one of the ways of amalgamating the people living in one country.

Remembering that it is usually easier in the fall to begin with foods in season we will suppose, for example, that vegetables are to be discussed in September. Do these lessons with vegetables leave with the girl a firm conviction that the vegetables are necessary for health even to the point of making her learn to like them? Is every girl in the class so convinced of the value of vegetables that she is going to have at least two vegetables in her diet every day? Does she know at what age children should begin to eat vegetables and that it is very important that they be persuaded to learn to like them early in life (for they will be exceptional children if they do like them at first)? Does she know how to prepare vegetables for children under five? Does she know which

ones they should not eat? Does she know which vegetables to buy to get the most food value for her money if she has to economize? Does she know that vegetables are very valuable in overcoming constipation and that it may be corrected or prevented by proper food? Does she realize its seriousness if allowed to continue? Does she know that green and leafy vegetables have different qualities from the root vegetables and that she should have some green and leafy vegetable at least two or three times a week and as much oftener as possible? Does she know which the green and leafy vegetables are? When leafy vegetables are scarce in January, February, and March, will she know what to do to safeguard her health, provided the cost of the green vegetables prohibits their use?

I have been trying to imagine myself back in the school room to see whether it would be possible to emphasize and to prepare the leafy vegetables that are most abundant in the fall, then later in the winter to emphasize cabbage and those leafy vegetables to be found all winter; and in the spring, beet greens and dandelions or other spring greens. Dried vegetables do not answer the same purpose; fruit is scarce and expensive at the same season as vegetables, and why should the pupils not know that canned vegetables are better than none at all. They should at least be taught to use more milk when green vegetables are unobtainable. It may be easy to teach vegetables in the fall but the real test for the girl comes when they are scarce and this is when she needs most help. Children are not going to remember from September to February what to do. They must learn by doing.

If every teacher realized how many children are really suffering from malnutrition because of the lack of vegetables, none could rest until she had planned to help her girls to get vegetables in their diets, not six months a year, but twelve months.

The importance of milk is usually strongly emphasized. Children know that it is essential for growth. They usually know of what milk is composed but how many girls increase the amount they have been drinking because of this knowledge? Which is more important, provided there is not time for both, to know the food composition of milk, or to learn to use at least 2 cups or more a day? Are we content and elated when we hear that one or two children or perhaps 75 per cent of the children are drinking more milk? The milk that 19 children drink will not help the twentieth who perhaps needs it most.

Do they know that milk is a food whether taken as a beverage or in cooked form? That when we say a quart a day, some of this will probably be taken in food prepared for the family. We frequently hear intelligent, well-informed people express surprise in learning that the food value of milk for adults is the same whether cooked or uncooked. But do they know how to get even a full quart into the diet in cooked form if necessary? Do they know how much milk a child one year old should have? 5 years old? 10 years old? And it is especially important to know how much milk is required by the whole family. (Perhaps the teacher in the arithmetic class might be persuaded to introduce a problem or two at this time.) Do they know that milk helps to strengthen the teeth and to steady the nerves? And, that no other food can supply the same qualities in such large amounts?

Since we find tea and coffee used when milk should be given, could not the subject of tea and coffee be introduced at this point to good advantage? This raises the question at once as to whether tea or coffee should be made in class. If we are emphasizing the health side of food why denounce the coffee and then proceed to teach children to make it? I imagine that children are almost universally told of its ill-effects. Some have said "it would be made anyway; then why not have it well made?" If this excuse still exists could not the preparation be left until the end of the year when a tray for the invalid may be prepared? We consider the tea and coffee habit one of the worst food sins of children. We find the tea and coffee habit so well established that children often go to school with only tea or coffee and bread for breakfast. The teacher of cookery in the grades can do much in overcoming this tea and coffee habit. A class of 25 underweight boys were running a race to see who would get into good physical condition first through observing good habits. A father of one of the boys who was 18 pounds underweight came to visit the class one day. He said, "My boy used to drink coffee three times a day but he came home from the class one day and he say teacher say coffee keep him from growing. He say, 'Mother, I don't want no more coffee,' and because Antonio stop, his brothers and sisters stop," and the man continued: "Why don't more of the teachers tell the boys what to do? They do it when you say so but they no mind us."

Doubtless every teacher does say much. How many say it with such force and personal application that children give up tea and coffee? These things have to be repeated many times, and said in a tone that

carries conviction, for learning good food habits is like learning a multiplication table. It frequently takes us from 6 to 8 or even more visits to persuade children to give up coffee entirely.

In a similar way the subjects of fruits, grain products, fats, sugars, eggs, meat, fish, and other foods might be discussed. There is the value of grain products for "vigor and vim" as Cho Cho says, the relative importance of the cereals with and without the outside coating removed, the various ways in which the cereals may be introduced into the diet other than as a breakfast cereal as in soups, breads, and puddings. Many children will eat the cereal for supper but prefer bread and milk for breakfast. The need of considerable fat in the diet should be emphasized in the light of more recent experiments, but the evil of fried foods cannot be too strongly urged. The harmfulness of sugar taken in concentrated form except at the end of a meal, with appropriate ways of introducing it in dilute form, and the undesirability of meat more than once a day, especially for children, and then only in small amounts, are only suggestive of the many things the children need to practice daily if they are to be healthy.

After each girl realizes the importance of the various types of food in the diet she has a problem at home which we are apt to overlook. This is the planning of the family meals and introducing into those meals the food she and the rest of the children need.

The average income does not warrant many extras and father says he wants something more substantial than creamed soups, cereals, puddings, and other things that are good for children. One dish must frequently provide the requirements for the mother, father, and all the children ranging in age from 1 to 16 years. The new dishes must be built into those the family already has. And the girl has to meet this problem. Do the children leave the class thinking that dessert is an essential part of a meal or do they know that it is possible to plan a one-dish meal? Many of them cannot afford two courses and it will not harm those who can afford three or four, or even more, to know how to plan one-dish meals. Anyone who has tried to stretch a \$20 or even a \$30 income to cover the cost of food, rent, light, fuel, clothes, and other expenses for a family of five is doubtless aware that in such families the dessert is a Sunday affair.

Many, many children, many more than we realize, are going to school without breakfast or with only a very meagre one. This may be because the mother is indisposed, it may be due to lack of child discipline, but a

proper breakfast cannot be too strongly emphasized. A proper breakfast need not be expensive. It may consist of bread and milk. If the grade teacher knew that her work would be easier if children had eaten a good breakfast it might be that she would add her word to that of the special teacher, thus reaching boys as well as girls. We find that when the same idea is urged by two or, better still, by three people interested in the same family, but from different points of view the results are much more satisfactory.

Then there is the luncheon purchased away from home either at noontime or recess. Oh! those pickles, ice cream cones, sodas, and doughnuts! How few girls realize what they are doing for themselves when they choose this kind of a luncheon!

What kind of suppers do the children have? Are they simple but nourishing? Do they have meat at night and if so are they restless in sleep? We often find children who are restless at night but sleep calmly and peacefully when the meat is taken out of their evening meal. They have better control of their nerves the next day, do better work at school, are less irritable.

Not only is it necessary to give suggestions concerning the meals, but it is especially necessary to urge regularity of meals with no eating between meals, eating slowly, and only light exercise after meals.

One word with regard to insisting on maximum standards before the whole class. One day a thin faced little boy asked how much he should weigh. When told, he looked down at the toe of a shoe that was far from new and said sadly, "Then I'm 20 pounds underweight?" He was asked if he drank milk and he said, "No, mother used to get a quart, but the baby had to have all of that." "Don't you suppose you could have just two glasses a day?" he was asked. And he said with tears in his eyes, "The baby died last week and perhaps I could have some now." The friend to whom this boy was talking did not say, "You tell your mother you must have a quart a day" because she surmised the problem in that home. We all, I am sure, would hesitate to urge the maximum when we know the conditions are unfavorable. It is far more considerate to urge the minimum in all cases and advise more if possible.

After the planning of the meals, the grocery order ordinarily follows in natural sequence. If meals are properly planned, however, would not the grocery order partially precede the meal planning? Many women buy from day to day. Too many buy from meal to meal. This is poor economy and leads to improperly planned meals. In planning

meals should not the amount of milk, vegetables, grain products, fruit, and fats that are required by the family, in other words a partial grocery order, be the basis—then the combining of these foods into meals with the addition of such amounts of meat, eggs, and fish as the family may need or may desire or can afford? Would it not be better to plan market orders a week in advance? In one family where we were asked to help, the man said he earned enough money to live comfortably but they never seemed to have enough to last through the week. They lived well for three or four days, then had bread and tea. The children were thin, always sick, out of school, and low in their class. The field worker planned with the woman the amount of milk per day, the amount of bread per day, the amount of other grain products, vegetables, fruit, fat, sugar, and meat, needed for the week. As many of these things as possible were purchased in advance. At the end of the first week of our work with this family, the woman said they had lived as well the last day as the first and all because she had planned ahead. In a short time the children were strong and sturdy and the mother said they were getting on so much better at school. She says now she does not know how she ever lived before. This is only one of many instances where planning ahead has not only saved the health of the children by stretching the purchasing power of the dollar, but it has frequently saved a family from debt.

When it comes to the question of economy, it makes some difference in the amount of growing material received in return for 10 cents whether that 10 cents is spent for oatmeal or for cornflakes. When shown a chart representing the relative value of these foods in terms of dollars and cents, many a mother has been convinced of relative economy when hours of talking have failed. These charts are just as convincing with children. We frequently hear girls say, "Oh yes, we learned how to do that at school, but we cannot afford to make it." Of course, an egg or milk adds nourishment, or perhaps muffins are made when eggs are cheap, but Mary would like to have them when eggs are 10 cents apiece, and she does not know how to use this muffin recipe without eggs. Three eggs a week for the baby is all that many families can afford when eggs are \$1.20 a dozen. If the recipes are to be tried in homes where they are most needed, then we must suggest how they may be adapted to suit varying incomes, using cheaper fats where possible and even water for milk. I wonder how many realize what a minimum grocery order looks like?

Are our directions such as will necessitate the fewest possible utensils and those the least expensive? Some of our cities have school kitchens beautifully equipped. It is a joy to the girls to work in them, but, even though the equipment is complete and a good example of what a well furnished kitchen should be, would it not be possible to play a game occasionally to see with how few utensils we can get along? To see which ones are dispensable, to devise substitutes for double boilers, for egg beaters, for rolling pins? It would be interesting to many, no doubt, to know what can be done when teaching a woman in her own kitchen where the entire outfit consists of two saucepans, perhaps only one, a knife, a spoon, and a tea cup. Will the girls who come from homes like this know how to apply what they learn, unless they are taught how to do things with as few utensils as possible?

There is need for urging cleanliness and sanitation; especially necessary is it to urge separate plates, cups, spoons, knives, and forks. There is need also for emphasizing cleanliness in the care of food, such as putting food under cover away from dust and flies, for emphasizing danger in handling bread and similar foods.

The material that might be given is almost endless. No teacher feels there is time to give it all. Perhaps the things suggested here are given in the majority of our schools today, perhaps they seem impracticable, perhaps this seems like a large program, but if you have visions of some lessons that seem essential being crowded out, go down into the crowded district of the city and with a real desire to help the people, study the faces of the children and then decide what seems most important. The need of economy, like malnutrition, is not confined to the crowded districts. Visit the homes of some of the children in a well to do district and talk with the mothers until you get their confidence; see their problems and learn, not alone of their struggles, but of the way in which they adapt themselves to circumstances.

Girls are going to learn to do the things that appeal to them, so that if there is not time to teach all the cooking processes in class we may be sure they will find out later, but they may get the message of health when it is too late. When they have homes and children of their own and are asked whether they learned at school things that were most important, what should the answer be?

RACIAL AND OTHER DIFFERENCES IN DIETARY CUSTOMS¹

VELMA PHILLIPS AND LAURA HOWELL

FOREWORD

Within the last few years has come an increasing realization of the need for more detailed information concerning actual dietary customs, especially among families of various racial groups. The nutrition worker who possesses such information can save much time, and many home economics teachers would find it valuable in making their courses really function in improving homemaking standards. The educational value of the school lunch is being stressed constantly and here also a knowledge of frequent dietary defects should go far in guiding the selection of points of emphasis especially needed in the various sections of the city where foreign colonies exist.

Dietary habits are remarkably fixed habits. Hence the data presented in this report, although collected several years ago in a limited number of sections in New York, provides a picture of dietary adequacy probably very similar to what would be found in a study conducted today in many other places than New York. The figures of cost are no longer accurate because of the increased food prices since 1918, but otherwise the study seems as valuable now as when first prepared and represents a real contribution to our limited stock of information about dietary customs.

Dr. Allinson was a woman with a remarkable gift for conducting investigations with thoroughness and skill and with a constructive vision which made the findings of widespread and permanent value. This is well illustrated by this report and the various reports from the Woman's Educational and Industrial Union, which were prepared under her direction, and by her work with the Woman's Division of the U. S. Department of Labor which was so sadly interrupted by her death in December, 1918.

Because of Dr. Allinson's close supervision of this investigation this report would seem especially valuable as an illustration of desirable methods to be followed in conducting social research in connection with home economics and presenting effectively the results of the investigation. For this reason, as well as because of the subject matter which it contains, I feel that the report should prove of great value and influence and am glad that it is to be available for use by publication.

EMMA A. WINSLOW.

¹ Prepared under the direction of May Allinson, 1917-18. Preface by Miss Allinson, Foreword by Emma Winslow.

PREFACE

How to get enough to eat in these times of high prices is a serious question for us all. But it was and still is especially serious for the foreign family with the very small income. Not only have prices jumped up beyond reach of many of these families, but their customary foods were suddenly cut off by the war. Roman cheese and olive oil have been considered a necessity in the poorest of Italian families. When Roman cheese rose to \$1.25 a pound and olive oil to \$4.00 a gallon, it was still considered an essential and the investigator found in the poorest homes Italians suffering from cold and lack of food, buying 1 and 2 ounces of Roman cheese and small quantities of olive oil.

Almost two-thirds of these 105 families whose diet was studied for one week were receiving less than the standard fuel requirement. Cereals, the cheapest fuel foods, may be within their reach but they have not learned how to prepare them nor how to eat them. When wheat, fats, and other foods to which they are accustomed are beyond their reach, there is serious danger of increasing the malnutrition characteristic of low income families.

Classes and demonstrations were conducted all over the city in 1917-1918 to teach the use and value of these new foods. But the foreign housewife is difficult to reach in public gatherings. Her place is still in the home and she must be reached there, to a large extent, by visiting housekeepers, dietitians, nurses, settlement workers, or others who have access to the home.

This investigation was undertaken by a group of eight students enrolled in the course listed as Practical Arts 301-2 in Teachers College, Columbia University, in the fall of 1917 under the direction of the writer. The field work began in October, 1917 and closed in February, 1918. Two months, March and April, were spent in tabulating and digesting the material gathered. The report was written by two of the students, Velma Phillips and Laura Howell.

The investigation was carried on in constant consultation and in coöperation with the Office of Home Economics of the United States Department of Agriculture which provided the schedules used. The completed schedules were turned into the Office of Home Economics for use in its dietary survey work.

New York is facing another winter when reconstruction conditions, many feel, will be even more difficult than the war conditions, and it seems worth while to bring to the attention of its people how the unusual conditions affect many of its inhabitants. These 105 families typify many families in their neighborhoods and show the need for constructive and practical education in the choice and use of foods from the standpoint of food value, cost, and satisfaction of the appetite.

With this motive in mind this study of the food used by 105 low income families, most of whom were foreign, is presented.

MAY ALLINSON.

October, 1918.

INTRODUCTION

How the family with the low income and especially the foreign family in the congested sections of New York City adjusted themselves to meet unusual conditions brought about by the war and reconstruction is the question suggesting this study. Three distinct groups or nationalities, Italian, Hebrew, and Negro, constitute the main basis for discussion. Of the 105 families from which complete weekly records were secured, 44 were Italian averaging 7 in a family, 22 Hebrew averaging 6 in a family, and 27 Negro averaging 4 in a family. Twelve more constituted a miscellaneous group of which seven were Irish, one Russian Pole, one Scotch, one German-American, and two German-Italian.

These 105 families comprised 562 individuals or 5.3 persons per family. Three-fifths (61 per cent) of the 562 persons were under eighteen years of age and almost one-half (47 per cent) were under fourteen years of age.

The investigators got in touch with these groups through families who were known to the Association for Improving the Condition of the Poor, and the settlements of the city. The majority of the families studied had no connection with these philanthropic organizations.

METHOD OF STUDY

An accurate record of the food consumed by each family for one week, the food value, the cost, and waste was the goal of the investigators. Scales, weighing accurately to the ounce, were taken to each family whose weekly diet was studied. An inventory of the food on hand was made by the investigator at the beginning and the end of the week. This was much less arduous than might be supposed. The investigator frequently found absolutely no food in the house at the beginning or at the end of the study. The mother explained that they had to buy for each meal, otherwise the children would eat it all up and there would be no food or money to buy more for meal times. Each day the food bought by the family was recorded. Specially prepared sheets were provided on which the weight, price, and waste were noted.

The waste, too, occupied a very small place in most of these records. Crumbs, peelings, and scraps were frequently utilized in many of these families. Some women were indignant at the suggestion that there should be any waste to weigh.

The investigator visited the family through the week as often as seemed necessary, in some cases every day. In other families, where some

member seemed intelligent and reliable, only two or three visits a week were made. In the foreign families, especially in the Italian families, the children took much of the responsibility for the weighing and recording and were found to be very faithful.

NEIGHBORHOODS

The neighborhoods varied with the nationality. The Italians and Hebrews visited lived for the most part on the congested lower east side, centering about Spring and Grand Streets, respectively. Their apartments were of the poorest type averaging from two to five rooms for large families of from seven to nine individuals. The Negroes who were visited lived on the upper side centering about 130th Street, where the housing conditions were comparatively good. Though the average Negro family was small, it occupied from two to eight rooms. Lodgers were much more common among the Negroes than among either the Italians or Hebrews.

LIVING CONDITIONS

Weekly incomes. The weekly incomes of these families showed a wide range. The Negroes ranked first in the income scale with the highest minimum of \$8.14 and the highest maximum of \$50.00 with the highest average of \$26.49 for the week. The Hebrews had the lowest incomes with the maximum weekly income of \$22.00 and an average of \$16.05.

Occupations. Each nationality group had its characteristic occupation. The majority of the Italian men were out of door day laborers doing the heavy work on the docks, near which they lived, and work on the streets and construction; though tailors, barbers, and others were represented. The men in the Hebrew families were garment workers for the most part and the Negroes were waiters and cooks. The miscellaneous group of 12 families of different nationalities were engaged in an equally miscellaneous group of unskilled occupations.

In many homes the women supplemented the family income. The Italian women did sweat shop work at home such as finishing clothing and making paper flowers. The Negro women frequently worked outside the home in domestic service. The Jewish mothers seldom worked outside the home if there were other wage earners. The women in the miscellaneous group were often employed as janitresses. The larger

incomes observed in some of the groups were often due to the earnings of the older children.

Rents. The rents varied with the section of the city. The proportion of income spent for rent varied slightly as is shown in table 1.

Considering the 105 families as a group, 17.5 per cent of the income was spent for rent. The rent paid by the average Hebrew family corresponds with the average of the whole group (17.4 per cent). The average Negro family spent a larger proportion (20 per cent) of its income for rent and the average Italian family, a smaller proportion (16.4 per cent).

Although the average of the table seems typical of the amount estimated as a fair allowance for the rent in the country in general, the extremes are striking. One-third of the families spent between 10 and 15 per cent of their income for rent and eight families spent less than 10 per cent. The Italian families whose incomes were increased above the average of their race because of the earnings of the children still remain in the crowded districts where rents are low. The Negroes, on the other hand, spend a somewhat higher percentage for rent than either the Italians or the Hebrews. This may be because they take their standards from their employers or, as is true in many places, because they are exploited.

Shopping. The majority of the families studied bought the food for one meal or at most for one day at a time and usually at the nearest store. Only those of the higher income groups shopped outside their own immediate neighborhood. The Hebrews and Italians bought in smaller quantities than the Negroes or the miscellaneous group. Two ounces of butter, one ounce of coffee, or four ounces of sugar were customary purchases. In the majority of these homes little if any food was ever kept on hand. The Negroes on the other hand often had an imposing array of food in the house and habitually secured larger quantities than the foreign families.

This study was made during the first year the United States entered the war and the food regulations were just going into effect. The field work began in October, 1917 and continued until February, 1918. During this time the first sugar shortage was at its height and the price at times and in some sections was exorbitant. This may account in some degree for the low percentage of sugar used and the comparatively high price paid. During December, January, and February the usual coal shortage and extreme cold made the need of high caloric value of food more imperative than under ordinary conditions.

Dietaries. In order to give some idea of the kind and selection of food used by the average family scheduled the following examples are given as typical for each race.

Jewish menus

Breakfast

Coffee with milk and sugar
Rolls Sweet butter

Lunch

Rye bread
Smoked salmon

Supper

Soup with vegetables and meat
Potatoes
Rye bread

Breakfast

Coffee with milk and sugar
Soft cooked egg
Rolls

Lunch

Rye bread
Kippered herring

Supper

Lima beans and barley
Potatoes
Rye bread

Italian menus

Breakfast

Coffee with milk and sugar
Bread

Lunch

Soup—Vegetables with small pieces of onion
and pork
Italian bread

Supper

Spaghetti with tomato paste
Italian bread

Breakfast

Coffee with milk and sugar
Bread

Lunch

Navy beans with tomato paste
Italian bread

Supper

Codfish cooked in oil
Potatoes
Italian bread

Negro menus

Breakfast

Pork chops
Corn cakes
Coffee Condensed milk

Lunch

Meat broth with rice
Bread and butter

Dinner

Lamb chops
Boiled hominy
Hot biscuit
Tea

Breakfast

Sausage
Hot cakes
Coffee, cream and sugar

Lunch

Fried hominy
Syrup Tea

Dinner

Fried ham
Sweet potatoes
Canned corn
Bread and butter

TABLE 1
Weekly income and percentage for rent

NATIONALITY	NUMBER OF FAMILIES	WEEKLY INCOME			PERCENT FOR RENT
		Minimum	Maximum	Average	
Italian.....	44	\$8.00	\$44.00	\$19.45	16.4
Negro.....	27	8.14	50.00	26.49	20.0*
Hebrew.....	22	7.20	22.00	16.05	17.4*
Miscellaneous.....	12	5.30	41.00	21.90	14.6

* Two Negro families and one Hebrew family omitted because rent was paid for in janitor service.

TABLE 2
Distribution of families when arranged according to cost of food per man per day

COST PER MAN PER DAY	NUMBER OF FAMILIES WITH SPECIFIED COST PER DAY				
	Italian	Jewish	Negro	Miscellaneous	Total
Less than 15¢.....					
From 15¢ to 20¢.....	1	2	2		5
From 20¢ to 25¢.....	4	3	3		10
From 25¢ to 30¢.....	2	5	2		9
From 30¢ to 35¢.....	11	4	4	2	21
From 35¢ to 40¢.....	7	3	4	3	17
From 40¢ to 45¢.....	4	4	4	2	14
From 45¢ to 50¢.....	2	1	2	1	6
From 50¢ to 60¢.....	5		3	4	12
60¢ and more.....	8		3		11
Total.....	44	22	27	12	105

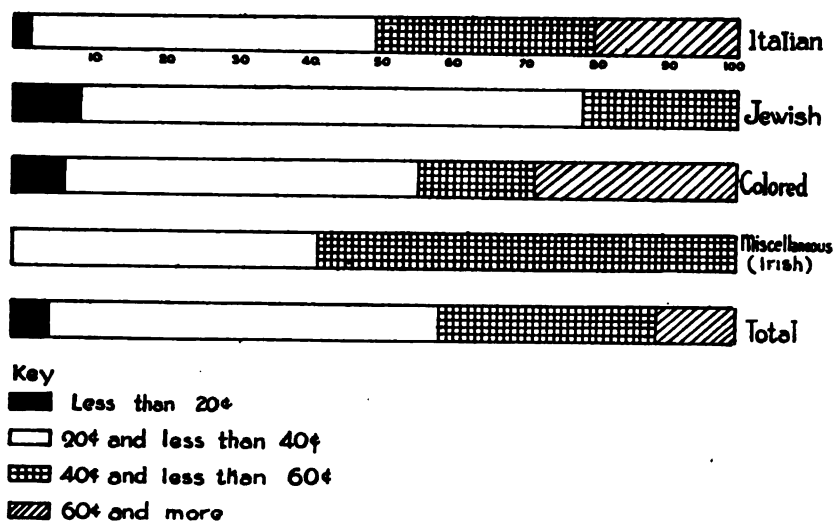
TABLE 3
Cost per 3000 calories

COST PER 3000 CALORIES	NUMBER OF FAMILIES PAYING SPECIFIED AMOUNT PER 3000 CALORIES				
	Italian	Jewish	Negro	Miscellaneous	Total
Less than 30¢.....	3	2			5
From 30¢ to 35¢.....	12	7	3	3	25
From 35¢ to 40¢.....	9	8	5	1	23
From 40¢ to 45¢.....	9	5	6	4	24
From 45¢ to 50¢.....	5		8	2	15
From 50¢ to 60¢.....	4		4	2	10
From 60¢ to 70¢.....	1		1		2
70¢ and more.....	1				1
Total.....	44	22	27	12	105

Daily cost of food. Thirty-eight of the families studied spent between \$.30 and \$.40 per man per day for food, with only 24 below \$.30, a sum higher than Sherman and Gillett² found in the families studied in 1914-1915 where the most frequent amount was from \$.25 to \$.35. One-fifth of the families in the present study spent more than \$.45, and one-fourth less than \$.30 per man per day for food. If these families had been having a diet providing 3000 calories per man per day, three-fourths instead of one-half of the families would have spent \$.30 to \$.45 per man per day for food.

Approximately 50 per cent of the Italian and Negro families spent below \$.40 per man per day for food, as shown in chart 1. Referring to Table 7 we see that 50 per cent of the Italians were receiving adequate fuel from their food while the diet of 81 per cent of the Negroes was deficient in energy. In view of the fact that the Italian people use so much macaroni and bread, this point calls our attention to the fact that grain products give the greatest fuel value for the money. In any food crisis conservation of cereals must not be urged among the working classes of

Chart I Showing percentage of families paying specified amounts per day for food



² Sherman and Gillett, Adequacy and Economy of Some City Diets.

limited means. It would seem as though conservation in this line should rest with those who can afford to pay a higher price per 1000 calories.

Proportion of income spent for food. Forty-five per cent of the income of this total group of families was spent for food. The variations for nationality are wide, ranging from 27 per cent for the Negroes to 60 per cent for the Italians. The small per cent spent by the Negroes may be accounted for by the smaller family and the larger income which was characteristic of the Negro families visited.

One hundred families were divided by nationality and listed in order of increasing amount spent for food per man per day. Each list was divided in two equal groups and the average amount spent for food and the average food value for each group was taken for consideration. It might be expected that in the "higher cost" groups the standard allowance³ per man per day for an adequate diet, consisting of three thousand calories, 75 grams of protein, 0.67 gram of calcium, 0.015 gram of iron, 1.32 grams of phosphorus would be realized.⁴ But it is interesting to note that the Italian diet provided the standard requirement on \$0.38 per man per day while the diets of the other three groups ranged from \$0.46 to \$0.52 before providing an adequate food value.

The striking deficiency in calories in the lower group is most important, for the deficiencies in the minerals might have been overcome had the calories been high enough. While sources of fat and protein are properly considered the most expensive food, there was no deficiency in either, showing that greater emphasis needed to be placed on increasing the purchase of cereals and vegetables. Adequate nourishment due to racial food habits seemed to be lost sight of through economic pressure.

Dr. Sherman has suggested, in the interest of proper nourishment, that no more food money should be spent for meat than for milk, and as much for fruit and vegetables as for meat. In order to get adequate energy on a limited amount of money one-fourth may well go for cereals. In comparison with this suggestion the following data from a study of the diet of our 105 families is given. (Table 5.)

The distribution of money in Italian families came nearer this suggested division of relative amounts to be paid for each type of food than in any of the other nationalities. The Negro diet is conspicuous for the small food value received in return for the money spent for food.

³ See Sherman's *Chemistry of Food and Nutrition*.

⁴ "We are now using 1.32 as agreeing better with all the evidence now available. This means that few dietaries are regarded as deficient in phosphorus."—H. C. SHERMAN.

Miss Gillett has formulated, in connection with the standard for the division for food money and the relative weight of food for expenditures, an estimate that for each pound of meat purchased there should be 3 pounds of milk and cheese, $3\frac{1}{2}$ pounds of vegetables and fruits, 4 pounds of grain products, and $\frac{1}{2}$ pound of fats, sugar, etc.

TABLE 4

Cost and food value of one hundred dietaries; average by nationality in two groups

GROUP	NUMBER OF FAMILIES	AVERAGE COST AND FOOD VALUE PER MAN PER DAY OF EACH GROUP						
		Cost	Calories	Protein	Fat	Calcium	Iron	Phosphorus
				grams	grams	grams	grams	grams
Italian.....	{ 1	20	\$0.28	2516	96.8	89.4	0.70	0.013
	{ 2	21	.46	3091	110.2	100.1	0.63	0.019
Negro.....	{ 1	12	.31	2268	73.5	91.9	0.48	0.010
	{ 2	13	.51	3340	102.3	139.3	0.74	0.017
Jewish.....	{ 1	11	.22	2028	75.0	40.5	0.39	0.012
	{ 2	11	.38	2943	114.7	76.9	0.69	0.019
Miscellaneous...	{ 1	6	.36	2808	95.6	89.1	0.74	0.012
	{ 2	6	.52	3506	123.0	116.0	1.05	0.018
Total.....	{ 1	49	\$0.30	2504	90.3	84.6	0.61	0.012
	{ 2	51	.49	3232	117.4	114.2	0.74	0.020

Note: The families were listed in order of increasing amount spent for food per man per day. The list was divided into two equal groups and the average amount spent and the average amount of food value for each group taken for consideration.

Three Italian and two Negro families were omitted because they were not representative. (Calories consumed by the Italians seemed too high for possible consumption while those of the Negro families seemed too low for typical regular habit.)

TABLE 5

Proportions spent for different foods compared with standard suggested

NATIONALITY	MEAT AND EGGS	MILK AND CHEESE	FRUIT AND VEGETABLES	GRAIN PRODUCTS	MISCELLANEOUS	TOTAL
Amounts suggested.....	\$0.20	\$0.20	\$0.20	\$0.25	\$0.15	\$1.00
Italians.....	.23	.14	.15	.28	.20	1.00
Negroes.....	.40	.13	.13	.18	.15	1.00
Hebrews.....	.36	.11	.12	.29	.12	1.00
Miscellaneous.....	.35	.15	.15	.20	.15	1.00
Total (average).....	\$0.31	\$0.12	\$0.14	\$0.26	\$0.17	\$1.00

TABLE 6
Percentage expenditure for each type of food, average of 105 families

TYPE OF FOOD	PERCENTAGE OF COST					PERCENTAGE OF WEIGHT				
	Negro	Jew	Italian	Irish	Total	Negro	Jew	Italian	Irish	Total
Meats and fish.....	36.0	31.0	19.5	29.0	26.0	17.4	12.2	9.3	11.1	11.7
Eggs.....	4.0	5.0	3.6	5.4	5.3	1.3	1.2	1.4	2.0	1.2
Milk and cream.....	12.0	10.0	10.3	15.0	11.0	20.7	17.1	20.2	27.0	20.1
Cheese.....	0.7	0.5	3.4	0.4	1.0	0.3	0.2	0.5	0.1	0.3
Fat.....	7.0	7.0	9.7	6.3	8.3	2.5	1.3	2.9	1.0	2.3
Grain products.....	18.5	29.0	28.6	20.3	25.4	30.1	36.0	37.1	21.8	34.5
Sugar.....	3.0	2.7	3.0	4.1	3.0	4.3	2.0	3.6	4.0	3.0
Fruits and vegetables.....	13.2	12.0	14.9	14.5	14.3	21.0	28.0	23.1	29.0	24.6
Nuts.....	0.6	0.0	0.4	0.0	0.3	0.2	0.0	0.1	0.0	0.1
Miscellaneous.....	5.0	2.0	6.6	5.0	5.4	2.2	2.0	1.8	4.0	2.1
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

From table 6, it can be readily seen that the families did not take advantage of the high food value of nuts and cheese. The relatively high expenditures for cheese by the Italians was due to the expensive cheese purchased and not to the amount.

FOOD VALUE OF DIETS BY NATIONALITY

The tables showing the food analysis are grouped so far as possible on bases of nationality to see if racial variations in food habits in any way account for difference in food values received. The diet of the Italians is characterized by the large amount of wheat products, green vegetables, and olive oil; the diet of the Negroes is characterized by pork products and milled grains such as rice and hominy; while the Hebrews adhere more or less strictly to the dietary laws. The miscellaneous group had an Americanized diet which was characterized by its high cost rather than by any one kind of food or by its food value.

In the whole group of 105 families, 61 per cent were receiving less than 3000 calories per man per day as shown in table 7. Among the Italians and miscellaneous families, 50 per cent received sufficient calories while only 30 per cent of the Hebrews and 19 per cent of the Negroes received the standard amount. It is particularly interesting to note that while the Negroes had a much greater quantity of food and spent more for it than the foreign families, they received the least nourishment from their food.

The supply of protein was more frequently adequate. Only 17 per cent of the families received below the standard allowance of 75 grams of protein, per man per day, as shown in table 8. But in the protein supply as in fuel value a wide variation was discovered among the families of different nationalities. Thirty-seven per cent of the Negro families received less than the standard amount and only 9 per cent of the Italians. Referring to table 6, we note that the expenditure of the Negroes and Italians for sugar and fat differed little, but there is a wide difference between their expenditure for meat and cereals. The Italians used large amounts of wheat products high in protein while the Negroes used grain products low in protein. Although the Negro expenditure for meat was high, the meat used was high priced, largely pork with a large amount of fat.

TABLE 7

Distribution of families according to calories received (3000 per man per day taken as a standard)

CALORIES PER MAN PER DAY	NUMBER OF FAMILIES RECEIVING SPECIFIED NUMBER OF CALORIES				
	Italian	Negro	Jewish	Miscellaneous	Total
Less than 1500.....	1	2			3
From 1500 to 2000.....	2	3	3		8
From 2000 to 2500.....	10	7	7	2	26
From 2500 to 3000.....	9	7	8	4	28
From 3000 to 3500.....	8	2	3	2	15
From 3500 to 4000.....	6	4	1	3	14
From 4000 to 4500.....	2	2			4
From 4500 to 5000.....	3			1	4
5000 and more.....	3				3
Total families.....	44	27	22	12	105
Per cent below 3000 calories.....	50	81	70	50	61

In table 12, compiled from 84 of the families arranged according to nationality, is shown the per cent of the families with diets deficient. The food factor most frequently adequate was the protein, only 17 per cent of the 84 families showing a deficiency. The fats might perhaps be considered as meeting the requirements since it is possible to substitute carbohydrate for the most part and it was found that no family had less than 13 grams per man per day.

All the mineral elements showed a high percentage of deficiency, 50 per cent of the families being below standard in calcium, phosphorus

and iron. If part of the protein needed had been obtained from milk, the protein standard would still have been met and the calcium requirement more nearly provided.

Analyzing the families by nationality it was found that 24 out of 31 Italian families had less than 3000 calories per man per day and that 13 of these families were paying more than \$0.35 per man per day. Of the 7 properly nourished families in this group one paid more than \$0.50 per man per day and six more than \$0.60.

TABLE 8

Distribution of families according to the amount of protein received (75 grams per man per day taken as a standard)

NUMBER OF GRAMS OF PROTEIN PER MAN PER DAY	NUMBER OF FAMILIES RECEIVING SPECIFIED NUMBER OF GRAMS OF PROTEIN				
	Italian	Jewish	Negro	Miscellaneous	Total
Less than 50 grams.....			1		1
From 50 grams to 75.....	4	4	9		17
From 75 grams to 100.....	15	7	11	4	37
From 100 grams to 125.....	11	7	5	5	28
From 125 grams to 150.....	5	4	1	2	12
150 grams and more.....	9			1	10
Total families.....	44	22	27	12	105
Per cent of families receiving below 75 grams.....	9	18	37	0	17

TABLE 9

Distribution of families according to the amount of calcium received (0.67 grams per man per day taken as a standard)

NUMBER OF GRAMS OF CALCIUM PER MAN PER DAY	NUMBER OF FAMILIES RECEIVING SPECIFIED AMOUNT OF CALCIUM				
	Italian	Jewish	Negro	Miscellaneous	Total
Less than 0.50 gram.....	7	8	12	3	30
From 0.50 gram to 0.67.....	13	7	5	1	26
From 0.67 gram to 0.84.....	10	5	5	4	24
From 0.84 gram to 1.00.....	7	2	3	1	13
From 1.00 gram to 1.25.....	4		1	1	6
1.25 grams and more.....	3		1	2	6
Total families.....	44	22	27	12	105
Per cent of families receiving below 0.67 gram.....	48	68	63	33	53

TABLE 10

Distribution of families according to the amount of iron received. (15 mgm. per man per day taken as a standard)

MILLIGRAMS OF IRON PER MAN PER DAY	NUMBER OF FAMILIES RECEIVING SPECIFIED NUMBER OF MILLIGRAMS OF IRON PER DAY				
	Italian	Jewish	Negro	Miscellaneous	Total
Less than 10 mgm.....	2	3	8	1	14
From 10 mgm. to 15.....	16	7	9	2	34
From 15 mgm. to 20.....	13	8	7	6	34
20 mgm. and more.....	13	4	3	3	23
Total families.....	44	22	27	12	105
Per cent of families receiving below 15 mgm.....	40	45	63	25	46

TABLE 11

Distribution of families according to the amount of phosphorus received (1.32 grams per man per day taken as a standard)

GRAMS OF PHOSPHORUS PER MAN PER DAY	NUMBER OF FAMILIES RECEIVING SPECIFIED NUMBER OF GRAMS OF PHOSPHORUS				
	Italian	Jewish	Negro	Miscellaneous	Total
Less than 1 gram.....	6	3	8		17
From 1 gram to 1.32.....	7	6	8	3	24
From 1.32 grams to 2.....	23	9	9	6	47
2 grams and more.....	8	4	2	3	17
Total families.....	44	22	27	12	105
Per cent of families receiving below 1.32 grams.....	30	40	60	25	39

Among the Hebrews it was found that the three families whose diet was adequate in food value in all respects spent between \$0.40 and \$0.50 per man per day.

Among the 27 Negro families 11 were paying more than \$0.35 for food per man per day, but of these only 4 families were meeting the food requirements in all respects. These paid from \$0.43 to \$0.68 per man per day.

The miscellaneous group had diets providing practically all of the requirements and spent \$0.31 to \$0.56 per man per day.

The number of families who spent liberally above the minimum cost per man per day (\$0.35) showed the smallest percentage of deficiencies.

From this it might be concluded that, had the amount of money been sufficient, there would have been much less danger of deficiencies in diet.

TABLE 12

Percentage of 84 families with diets deficient in one or more food values, arranged according to nationality

ITEMS OF FOOD VALUE	STANDARDS	PERCENTAGE OF FAMILIES RECEIVING LESS THAN THE STANDARD ALLOWANCE OF FOOD VALUE				
		Italian	Jewish	Negro	Miscellaneous	Total
Calories.....	3000	50.0	81.0	70.0	50.0	61.8
Protein.....	75.0 grams	9.0	18.1	37.0	0.0	17.1
Fat.....	56.0 grams	22.7	50.0	0.0	0.0	20.0
Calcium.....	0.67 grams	51.7	72.2	59.2	25.0	57.3
Iron.....	0.015 grams	48.0	50.0	62.9	25.0	51.2
Phosphorus.....	1.32 grams					
Cost per man per day.....	\$0.35					
Per cent paying less than \$0.35 per man per day for food.....		14.0	50.0	25.0	0.0	42.8

All previous studies whether of American or foreign families have shown a deficiency in mineral content. This study shows an even greater deficiency in the supply of phosphorus and iron than was discovered in a previous study in New York. Sherman and Gillett found in a study of 92 families in New York City in 1917 that 48.9 per cent of the families were receiving less than the standard allowance of 1.44 grams phosphorus per man per day; 53.2 were receiving less than 0.68 gram calcium, and 41.3 per cent less than the 15 milligrams of iron. This study in the winter of 1918 showed the following increased deficiency:

	1918	1917
	<i>per cent</i>	<i>per cent</i>
Families receiving less than the standard allowance of phosphorus.....	61.8	48.9
Families receiving less than the standard allowance of calcium.....	57.3	53.2
Families receiving less than the standard allowance of iron.....	51.2	41.3

Doubtless this deficiency in the mineral content was one of the causes for the undersize and lack of vigor noted among the children of the families studied. Among the Italian children there were many cases of rickets, in fact one would seldom see a child between one and eight

years of age who was not extremely bow-legged. The investigators found many homes in which the housewives bought no milk at all because they thought it too expensive and at the same time were buying a small piece of cheese at \$1.25 a pound.

In the Italian homes visited by the dietitians of the New York Association for Improving the Condition of the Poor there was found a decided contrast in their liberal use of milk.

This is only one of the many illustrations that could be given of the improvements brought about in the diet by careful, personal instruction by philanthropic organizations. Lectures and group instruction would be of practically no avail in these instances because these women do not attend public gatherings and could not understand what was said if they did. This individual instruction is a continued tedious process because the habits of years have to be overcome; yet the children are the future citizens and it is not right that they should suffer.

In view of the conditions shown by dietary studies and in the improvement shown through instruction in the homes where mothers have not had an opportunity to learn how to adjust themselves to their circumstances, it would seem to be a much wiser plan to spend money for instruction of the mothers rather than to spend it later as charity, doctor's bills, punishment for crime, and education and care for the mentally deficient.

CHICAGO'S EXPERIMENT

NANCY G. GLADISH

Austin High School

In February, 1920, at the beginning of the semester, the Chicago High Schools offered a half year general course in home economics for first-year girls. Ten weeks are used for food study, hygiene, and care of the house, and ten weeks for textiles, study of the family, and house furnishings.

The lessons have been worked out by groups of the teachers, who chose the part of the subject each preferred, and consulting together arranged the material in shape for use.

In many cases the domestic science and domestic art teachers carried parallel classes, exchanging at the end of ten weeks, so that each might keep to her major subject. In some cases, however, the same teacher is carrying the whole course.

At the close of the first ten weeks a questionnaire was sent out, and according to the returns the teachers seem to find the course a success, even though changes will have to be made, and some lessons simplified and shortened. Many of us feel that it is the greatest opportunity that the home economics group have had to reach the girls who have never before been able to take the subject.

The following schedules are still open to change, but indicate the line of work:

OUTLINE OF A GENERAL COURSE FOR HIGH SCHOOLS FROM THE STANDPOINT OF THE HOME

5 single periods per week—20 weeks.

1. The Home. Emphasis on food. *Ten weeks.*

Incomes and budget. Typical incomes of various groups of families represented in Chicago, e.g., instructors; ministers; lawyers; carpenters; street-car men; clerks; unorganized laborers. Division of income, budget. Detailed lessons on amount to be spent for housing, clothing, and food; savings; recreation; banking; accounts.

Food. Food for the family for the day; planning of meals for the day; marketing; special needs of members of the family, e.g., small children, aged, invalids. Preparation of meals. Trays for the sick. Cooking for children.

Care and operation of home. Systematic planning and doing of daily and weekly work in the home; reading of electric and gas meter; heating systems; plumbing; plumbing code. Laws relating to housing.

2. The Home. Emphasis on clothing. *Ten weeks.*

The family in the home. Primitive life; evolution of family, part family life has played in civilization. Relation of family to community.

Clothing. Principles which underlie selection of materials to be used in clothing and household furnishings; testing of fibers; comparison of ready-made and bought garments; remodeling and renovating; care of garments. Making some garments. Care of fabric and laundry work.

Furnishing of the home. Selection of the home. Cost and decoration. Art principles underlying the selection and combination of colors.

Bibliography

Food Study, Wellman.

Clothing for Women, Baldt.

Housewifery, Balderston.

Manual to Business Forms, Eaton.

The Family as a Social and Educational Institution, Goodsell

Decoration of the Home, Daniels.

Feeding the Family, Rose.

The Business of the Household, Taber.

Care of the House, Clark.

The following shows how the course might be divided into recitation and laboratory periods. It also shows how easily it could be programmed.

WEEK	RECITATION	RECITATION	LABORATORY	LABORATORY	RECITATION
1	Typical incomes	Food for the family	100 calorie portions	Food preservation—experiments	Cost of foods
2	Division of income	Division of income. Begin budget	Food preservation. Practical	Food tests. Analysis	Complete budget
3	Detail of food in budget	Detail of food in budget. Begin note books	Day's ration in raw food materials. Menu	Prepare breakfast	Discuss breakfast cost—adequate food value?
4	Table service	Planning details of laboratory work	Prepare luncheon	Prepare dinner	Discuss luncheon and dinner cost and adequate diet
5	Planning special diet—children and aged	Plan laboratory work	Prepare tray for child	Prepare tray for elderly person	Note book work
6	Household accounts—Tabulate cost of meal	Banking—saving and checking	Food tests	Food tests	Thrift lesson. Methods of investments
7	Marketing	Invalid diet	Prepare trays	Prepare trays	Weekly work of the home
8	Methods of heating	Lighting. Reading meters	Ventilation and experiments	Care of floors	Plumbing
9	Leavening agent	Meat—experiments Home recreation	Bread making Afternoon refreshments	Meat Evening refreshments	Note book work
1	The family. Primitive and patriarchal	Selection of material for a hat	Making of a hat	Making of a hat	The family. Middle Ages. Renaissance
2	Family down to present time including English	Effect of industrial revolution on family. The present situation	Making of a hat	Making of a hat	Cost of hat and comparison with commercial hat
3	Commercial patterns	Discussion of sample	Testing material for selection of goods for garments	Testing material	Physical properties of fabric

WEEK	RECITATION	RECITATION	LABORATORY	LABORATORY	RECITATION
4	Selection of material for garment	Principles underlying home decoration	Making a garment	Making a garment	Floors and floor covering
5	Wall and wall covering	Selection of furniture	Making a garment	Making a garment	Furnish a 4 room flat \$500
6	Seasonal care of clothing	Repair of garments	Making a garment	Making a garment	Cost of garment and comparison with commercial garment
7	Complete details of furnishing	Note book	Making a household article	Making a household article	Preparation of clothes for weekly wash
8	Use of reagents in softening water	Soaps and bluing. Starch	Laundry	Laundry	Laundry appliances and care
9	Detail of clothes in budget	The completed budget for family	Laundry	Laundry	General summary and note book

While the course seems crowded and almost impossible of achievement, while it requires careful planning and preparation, the girls enjoy it, perhaps partly because it means high speed work, as youth loves the swing of rapid action.

It gives the pupils a starting point for knowledge of many things relating to home making, and in some cases it has aroused a strong desire to take the fuller home economics courses which will still be offered to upper class students.

Some teachers have linked up the work with the "home project" idea, and that is one of its possibilities, and, indeed, almost a necessity if the amount laid out is covered and made sufficiently the pupil's own so that it may really function in home life.

The consensus of opinion of the home economics teachers seems to be that Chicago's Experiment is "blazing the way" for some very fine, useful, constructive work.

A PROJECT IN HOUSEHOLD ARTS

HELEN MESTON

Note: The project herewith reported originated in a Household Arts Class in a private school in New York City during the term of practice teaching of Miss Helen Meston, a Student of Teachers College, Columbia University, and was carried out by her class under the supervision of Miss Josephine Marshall.

It originated with the children and in the course of its development all phases of the work which the teacher had felt the girls were ready for and should have, arose naturally through the children's own suggestions. This was particularly interesting in as much as in a discussion previous to the origin of the project the children had expressed the opinion that they had had all they needed of costs, food values, and even of cooking processes, as is shown in Miss Meston's report.

"We want to earn some money to buy a moving picture machine for our school, and we'd like to give a luncheon to our mothers and charge them for it!"

This was the eager greeting which the teacher of foods received as she entered the laboratory of the Junior High School. The teacher was no less delighted with the scheme than were the girls, because she saw in it the possibility of working out certain plans which she had for the semester's work in a way that would be most interesting to the girls. The very next remark of the spokesman was evidence that one of the aims would be reached with no difficulty whatever. "It would have to be simple, because we want to make money."

In planning the work in foods for the semester, the teacher had in mind some things which she felt it was quite important for the girls to learn. These girls had done some work in the preparation of foods and it seemed best that they take up their study now from the standpoints of health and economy. In a preliminary discussion lesson, very little interest was aroused in food values or anything in connection with health. The girls said, "We had that last year." Very few of them had ever been confronted with problems of economy, so this had no place in their original plan for serving a luncheon. The outlook for teaching the things that the girls needed, without lessening their interest, had not been very bright.

How different the problem became when they, themselves, felt the need for these things! The class at once plunged into the plans for

the luncheon. After deciding upon the time, the menu was considered. This discussion followed:

Teacher: "What do we have to think about, in planning this menu?"

Edith: "Cost, because we want to make money."

Teacher: "Anything else?"

Mabel: "We want to give the most food value for the least money."

Jean: "Isn't there some way of finding out what is the food value of anything?"

Mabel: "Isn't there something about calories?"

The meaning of the term "calories" was discussed, and the way the calorie is used to measure the energy which our foods give us. Then the need for different kinds of food—especially protein, minerals, and vitamins—was considered. The next question was, "What dishes can we serve that will give these things for the least money?" Macaroni and cheese was decided upon as a satisfactory main dish. Edith told about her mother's recipe for macaroni and tomato with grated cheese on top, so Edith was asked to bring her recipe next time and prepare it.

At the next lesson, one group prepared macaroni and tomato from Edith's recipe and one group macaroni and cheese from another recipe. Two girls worked out the number of calories in each recipe and two worked out the cost. The two dishes were properly served at the table and the vote was in favor of Edith's recipe. The class was asked to complete the menu that day. Many things were suggested, but they finally decided upon "Polly's salad," rolls, cocoa, and lemon jelly with whipped cream.

There were still a number of details which had not been considered, so, at the beginning of the next lesson, the teacher asked the class to choose a committee to whom they were willing to entrust the plans for the luncheon. This committee met with the teacher, and made very definite plans for the menu and the apportionment of the work, while the remainder of the class made "Polly's salad" and cocoa under the direction of the supervisor. The general committee appointed the waitresses, the reception committee, and a committee for the preparation of each article of food, and assigned the duties to each group. The girls on the committee did practically all of the planning and choosing, with only occasional suggestions and criticisms from the teacher.

During the last regular lesson before the luncheon, each group was asked to make out its market order and hand it to the teacher. (These orders, after being checked and revised, were returned to the girls on

their marketing day.) A practice service followed, in which the waitresses could learn their part in the serving that would be needed. Two days before the luncheon, a little extra time was taken for a trip to the market, where the girls did their own purchasing under a teacher's supervision. On the afternoon before the luncheon was served, the girls met without the teacher to prepare their jelly, mayonnaise, and a few other things. Despite the previous warnings of the teacher that the room should be cleared up and the food carefully put away to be kept clean, the room was left in a very bad condition and some of the food exposed to dust over night. When the principal of the school saw the room the next morning, she felt that this was the time to teach the lesson the children needed and that it would be more effective if it should come from the principal instead of from the teacher of foods. Though she hated to cast shadows on the big day, she considered this one of the biggest lessons of the whole project, so she called the children out of their classroom and gave them a lesson in cleaning up, in taking care of food, and most of all in assuming their share of responsibility. It was done in the kindly but forceful way that brings results. Needless to say, the rooms were left in "apple-pie order" after the luncheon.

On the day of the luncheon, each group went to work in a business-like way. Since the dining room was on the floor above the kitchen, there was a teacher in the dining room and one in the kitchen to suggest and help when help was asked for, but the work was done entirely by the girls, and their own ideas were carried out. Despite the fact that the macaroni had not enough salt, the salad plates were a little too full, the whipped cream on the dessert a bit "plastered," and the waitresses a little confused, the luncheon was voted a success and the mothers enjoyed it.

When making the plans, the girls were inclined to buy and make too much of everything. The teacher showed them what a small profit they would have if they did this and suggested ways of cutting down, but they were sure they needed all that they had planned for, so they were allowed to have their own way. They did have a good deal of food left, of which they had to dispose. Some of it was sold for use in the school luncheon, and some was sold to the mothers.

Menus and place-cards had been made in the art class, costs had been calculated in the seventh grade arithmetic class, and application of facts learned about foods were made in the hygiene class. These things, and the fact that the teacher in charge of the lunch room moved

out of her room, and served luncheon to the little children in the Kindergarten room, show the kind of coöperation that exists in the school.

One of the most interesting things was the way in which Mabel took hold of the work. She had never cared for practical work before; though she would always do what was assigned to her, she had never shown any real pleasure in doing it. From the beginning, she was interested in this and the calculation of the number of calories in each dish delighted her. When it was found that there would not be time to calculate calories in the class before the luncheon, she asked if she might do it outside of class. She did this, and after her work was approved by a teacher, she gave a little talk to the mothers about the number of calories that were being offered them.

At the first lesson after the luncheon, the whole class computed the calories in the dishes that were served, from a list of 100-calorie portions of different foods. They reviewed the reasons for computing calories, and found out about how many calories they would need in a day and how many for a single meal. This led, during the next lesson, to a trip to the Museum, where there was a special food exhibit. After this visit the girls asked for more study of food values. They planned to set up an exhibit of 100-calorie portions, and did so at a later period.

In the last lesson of this project, the children were asked to criticise their work from a general standpoint and to tell what they had learned from it individually. They thought the whole project had been worth while. They had learned to work together, and they had learned something about preparation of foods, table service, marketing, and care of the kitchen. Some of their own adverse criticisms were: "We had too much food." "The waitresses were not always paying attention and had to be called to their work." "A few girls tried to do too much and didn't give others a chance." "The macaroni didn't have enough salt." The teacher suggested that everything should be tasted before being served. They all thought they could do better another time.

The supervisor was anxious for them to have a chance to correct the mistakes which they had made, so since the girls had worked out one project of their own, she suggested that they plan and serve a very simple luncheon for themselves, during a regular class period, doing everything as much better than they did it before as possible. The girls were pleased with this plan, and worked out this luncheon on the basis of their own individual needs. The serving of this completed the semester's work.

TRAINING HOME ECONOMICS STUDENTS FOR JOURNALISM¹

MARIE SELLERS

Household Editor, "Pictorial Review"

It is a great privilege to speak on the topic of training home economics students for journalism because the farther I get into magazine work the more I realize the great need there is for journalistic training for the college student.

Practically all of the leading agricultural colleges have courses in journalism, sometimes called "agricultural journalism" or "industrial journalism." Institutions such as the Universities of California, Colorado, Illinois, Purdue (Indiana), Iowa State College, Kansas, Michigan, Minnesota, Missouri, Nebraska, Cornell (New York), North Dakota, Ohio, Oregon, Pennsylvania State, Washington, Wisconsin, give journalistic training to students in home economics.

Whatever the courses may be named, or whatever they purport to teach, it can be nothing but journalism, regardless of the subject-matter that forms the basis of the actual writing. If one can write acceptable news-items, editorials, or special articles, with their related journalistic forms, it makes little difference whether one specializes on alfalfa or human nutrition.

The best training for a person who wishes to enter the field of writing on home topics, is a *combination of the best in journalism and the best in home economics*. A person lacking in either is severely handicapped, and it is hard to tell which is the worse—a trained home economist who thinks she can write, but can't; or a trained writer who thinks she knows home economics, but doesn't. It is futile to debate the point; first, because it is a matter of opinion; and, second, because both are unspeakably bad.

A successful writer in this field must know the subject on which she writes. It is doubly necessary, because almost all readers have enough knowledge to enable them to detect some errors of facts.

At Cornell the journalistic courses insist first on a ground work in the principles of English composition. No one can enter the journalism

¹ Brief summary of a paper presented at the Thirteenth Annual Meeting of the American Home Economics Association, Colorado Springs, June, 1920.

courses who has not satisfied that requirement. This practice is the usual one at other institutions, and I feel that it cannot be considered too seriously, for a training in *good* English expression as well as composition is very much needed today. There are many students in our educational institutions, and especially in the agricultural colleges, who have not had in their youth the opportunity to hear perfect English spoken. In many cases these students' parents have moved out into the rural districts before schools were available and there have been, in many cases, few opportunities when advantage could be taken of good training in English. Some of the women students in agricultural colleges which I have visited have spoken to me of this and have expressed their desire to have better training in the use of correct English. No field offers more opportunities for the use of journalistic training than that of extension work. The extension worker must be versatile not only in many phases of home economics but she must be ready at a moment's notice to give a speech or write an article or prepare some news item or editorial for the local papers.

I hope the time has come when a course in journalism will be required for each home economics student, or at least that course advisers will be instructed to urge their students to elect some study in journalism.

As for the use of journalistic training in research work, editorial work, and magazine writing, there is a real need and a demand for combined training in home economics and journalism for a limited number of persons. Those qualified by training and aptitude will have no difficulties, other than those inherent in hard work, unflagging energy, and constant study, in achieving a high success.

EDITORIAL

Annual Meeting of the American Home Economics Association.

The thirteenth annual meeting of the American Home Economics Association was held at the Hotel Antlers, Colorado Springs, Colo., June 24 to 29, 1920. There were about 300 in attendance. The arrangements had been made by Inga M. K. Allison, Chairman of the Committee on Time and Place, and every convenience and comfort possible to the members of the Association had been provided.

The first Council meeting was held Wednesday evening, June 23, at 8.00, and the regular sessions of the Association began at 2.00 p.m. on Thursday, June 24. The program committee, with Abby Marlatt as chairman, had planned for two general meetings daily, thus leaving some time each day for those in attendance to avail themselves of the opportunities for trips 'round about the Springs.

At the first meeting of the Association, held in the Ball Room of the Hotel Antlers, Mayor Thomas, of Colorado Springs, extended the greetings of the city to the Association, and Dean Corbett of the Colorado Agricultural College, Fort Collins, brought the welcome of the state. The president of the Association, Edna N. White, responded to these greetings, and struck the keynote for the meetings to follow, showing their breadth of interest. She indicated the relation of the A. H. E. A. to child welfare, social service, legislation as affecting the home and women in industry, and the field of education in general.

Miss White emphasized the importance of surveys in the development of the work in home economics.

Two addresses of strong, general interest were presented at this session—one by Mrs. Rufus Dawes, of the Community Kitchen, Evanston, Ill., who spoke on the development of community kitchens, and the other by Olive Davis, of the Government Hotels for Women, Washington, D. C., who spoke on the problems concerned with the organization and administration of these hotels.

In the evening, in the Sun Parlor of the Hotel Antlers, the Institution Economics Section held its meeting and the Extension Education Section met in the Ball Room. Strong programs had been arranged and both meetings were well attended.

The meeting on Friday morning was in general charge of the Extension Education Section. Preceding this program, Cleo Murtland, Chairman of the Committee on Education of Girls and Women for Industrial Occupations, of the National Society for Vocational Education presented a report. The American Home Economics Association took the following action in relation to the report:

I. *Resolved*, That the A. H. E. A. go on record as approving the statement as made in the introduction of the report as presented; and be it further resolved that the A. H. E. A. go on record as favoring a just division of federal appropriations for trade and industrial education in order that the interests of girls and women in industry may be properly considered and their education may be more adequately supported.

II. Voted that the A. H. E. A. appoint a committee to coöperate with a committee representing trade and industrial education of women from the N. S. V. E., said committee to present a preliminary joint report at the February meetings of the A. H. E. A. and the N. S. V. E., and also at the annual meeting of the A. H. E. A. in June, 1921.

III. *Resolved*, That it is the consensus of opinion of the A. H. E. A. that in the vocational education of women in industry the educational value of extramural training in the shops, factories, and offices is of equal rank with that given within the four walls of the school building, and that it should be organized and supervised.

The survey of the work of the extension field was well presented by Florence Ward of the Office of Extension Work, North and West, and by Ola Powell, Office of Extension Work, South. Papers were presented by Miriam Haynes, State Leader, Colorado, and Nina Crigler, Food Specialist, University of Illinois.

On Friday afternoon two round tables were conducted—one of Red Cross workers, and one of public school teachers with Jenny H. Snow, Supervisor of Household Arts, Chicago Public Schools, as chairman.

At 8.00 p.m. a general session was held, with Abby Marlatt as chairman. Dr. Caroline Hedger, Medical Director of the Elizabeth McCormick Memorial Fund, Chicago, told of the work of that organization in combating malnutrition. She was followed by Marie Sellers of the *Pictorial Review*, New York City, who spoke on Training Home Economics Students for Journalism, and Harlan Smith, of the U. S. Department of Agriculture, who told of the publicity work of the Department of Agriculture in relation to home economics.

At the Saturday morning meeting Dr. Langworthy spoke of the work in nutrition of the National Research Council. The meeting from this

point on was in charge of the Textile Section, Mabel B. Trilling, presiding. Grace Denny, Ethel Phelps, and Paul I. Cherington, Secretary of the National Association of Wool Manufacturers, spoke on various phases of the textile question. Miriam Birdseye presented a report of the excellent constructive work which has been done, by the committee of which she is chairman, on establishing minimum standards for textile fabrics.

At the evening meeting the Textile Section, with Mabel Trilling as chairman, and the Science Section, with Dr. Helen B. Thompson as chairman, held meetings. Both meetings were well attended and excellent papers were offered.

Other papers were presented on Monday and Tuesday, June 28 and 29. Hugh Magill of the National Education Association spoke on The Nation and Education. Dr. Agnes Fay Morgan and Dr. Helen B. Thompson spoke on scientific phases of home economics.

At 2.00 p.m., Monday, June 28, the Science Section held a second meeting with Dr. Helen B. Thompson presiding. On Tuesday afternoon a round table was held on Education in Homemaking, with Adelaide Baylor of the Federal Board for Vocational Education presiding.

Four Council Meetings and two general business meetings were held with excellent attendance.

The officers elected by the Association for the ensuing year are as follows: President, Mary E. Sweeney; Vice-presidents, Edna N. White and Isabel Ely Lord; Council Members (terms to expire, 1925), Inga M. K. Allison, Isabel Bevier, Mary Kelso, Abby Marlatt, Helen B. Thompson. The Council appointed Lenna F. Cooper as secretary and Mr. H. G. Turpin as treasurer. A more detailed statement of the Council meetings and the business meetings of the Association will appear in the Association Bulletin.

Due to the fact that the Secretary was teaching in the summer session in the University of Colorado, and had been graciously released for part of the time of the meetings, Lenna F. Cooper, the newly elected secretary, acted as secretary pro tem during the Council meetings and business meetings on Monday and Tuesday, June 28 and 29.

Very efficient work was done by the Pen and Press Committee, with Ava B. Milam in charge, in providing reports of meetings to local and other daily papers, and reports of the convention to periodicals. This service was much appreciated.

CORA M. WINCHELL,
Secretary.

The Conference on Group Living. The Editor of the JOURNAL was particularly favored in being able to attend the Conference on Group-Living held at the Lake Placid Club, Lake Placid, N. Y., May 27 to 31. Some 80 people gathered there, representing among others the American Home Economics Association, the American Dietetic Association and the Young Women's Christian Association. The presence of several deans of women and members of the faculty in institutions where institution administration courses are taught added to the educational value of the conference. The one thing that marred the conference was Mrs. Dewey's illness. She was able to be present only at the first meeting when she gave her cordial welcome to the conference and made suggestions of great value. The program was an unusually broad one, including practical aspects of the work, the theoretical side on which these practical applications were based, business methods and research. Community kitchens, cafeteria service, the work of the social service dietitian, aspects of coöperative buying, opportunities for training in technical fields, diet studies, research work illustrated by a study of the apartment hotel, an account of work actually accomplished, such as the experiment in democracy in running government hotels—each of these received attention.

Opportunities were given for inspecting the kitchens at Lake Placid, and, as always, walks, boating, and motor trips added to the pleasure of the guests.

The informal conferences were especially valuable, as many points were brought out in these that were not touched upon in the more formal speeches. Several of the papers will appear in the JOURNAL, some in the *Modern Hospital* and in other publications, while a general summary of the conference will also be printed.

Diabetes and the War. It is a relief after reading and thinking of the nutritional calamities of the War, to learn of nutritional gains. One such is the decrease in diabetes of which many reports are coming in. Magnus-Levy in a recently received number of a German periodical¹ gives figures for the civilian population of Berlin. From 1900 to 1914 deaths from diabetes had increased from 245 to 444, but by 1918 they had fallen off to 202. "The development of diabetes is particularly favored by luxurious nutrition."²

¹ *Deutsche Medizinische Wochenschrift*, 45 (1919), p. 1379.

² *Chem. Abs.*, April 20, 1920.

BOOKS AND LITERATURE

Bobbins of Belgium. BY CHARLOTTE KELLOGG. New York: Funk and Wagnalls Company, 1920, pp. 314. \$2.00.

"In Flanders fields the poppies blow" we have heard many times since MacRae wrote his exquisite little poem, but far less have we heard of the so-called "flower of Belgium" that continued to grow and blossom on the lace cushions of the Flemish women despite the vicissitudes of war. Many American women have an appreciation for "real" lace and cherish a few pieces perhaps handed down from mother to daughter, but few there are who have any knowledge of the technique of such lace and the conditions under which it is made. Mrs. Vernon Kellogg in her book, entitled *Bobbins of Belgium*, describing a series of "little journeys" to the lace districts, gives in informal and non-technical language much interesting information about the lace industry which has flourished in Belgium since the Renaissance.

Strangely enough the Great War has in many ways benefited this industry in Belgium. Through the efforts of the Brussels Lace Committee, a group of prominent and devoted Belgian women, the work was kept going during the war, fine old designs and types were revived, better wages were obtained for the workers, and, what is perhaps even more important for the art, normal schools are being developed in which workers are trained as teachers.

Bobbins of Belgium may also be considered a plea to patrons of the arts to encourage the making of the more difficult and delicate kinds of lace suitable in reality only to be placed in collections. The more skilled workers are passing, but new ones will take their places if the wages are made adequate.

The book contains many and excellent illustrations of the various kinds of lace

made in Belgium and of some pieces of historical interest, such as the scarf presented to Queen Wilhemina of Holland in gratitude for the help given to Belgians within Dutch borders during the war, and the magnificent banquet cloth presented to Queen Elizabeth on her return from exile.

An appendix, with illustrations, by the Directrice of the Brussels School of Design gives the fundamentals of construction of the two main types of laces, those made with the needle and those made with bobbins.

RUTH VAN DEMAN.

Care and Feeding of Infants and Children. (A Text Book for Trained Nurses.) By WALTER REEVE RAMSEY, M.D. Philadelphia: J. B. Lippincott Co., 1916, pp. 290. \$2.00.

Infancy and Childhood. (A Popular Book on the Care of Children.) By WALTER REEVE RAMSEY, M.D. New York: E. P. Dutton & Co., 1916, pp. 198. \$1.25.

The worth of a book on child care is measured largely by its simplicity and adaptability to the every day needs of mothers and nurses. Dr. Ramsey in his two volumes has made it possible for mothers and nurses to obtain essential information regarding the care of children without going into the intricacies of percentage feeding or infant anatomy. A lot of scientific material has been boiled down by Dr. Ramsey and presented without fads or fancies. Especial attention is given to breast feeding and the methods of encouraging it. He asserts that "90 per cent of mothers can nurse their babies in whole or in part for the first few months and many can nurse them wholly or in part for the first year."

His little book on *Infancy and Childhood*, written in a popular style, is commended to mothers who desire definite and concrete information regarding the up-bringing of their babies. This book has stood the test of four years and is still called for in increasing numbers. A little revision in certain parts would bring it more fully up to date, but even as it stands it is still a valuable manual for the mother.

The nursing manual on the "Care and Feeding of Infants and Children" is presented as a text book for trained nurses. It goes more into detail in the various phases of child hygiene and is profusely illustrated. Dr. Ramsey recognizes the need of nurses to be informed as to the development and progress of child welfare work.

Dr. Ramsey in his first chapter points out clearly the necessary information for nurses relating to the development and progress of child welfare work. In this manual Dr. Ramsey, appreciating the need of nurses for a knowledge of fundamental principles of artificial feeding, has given more space to this subject although he is just as insistent upon breast feeding as in his book for mothers.

The worth of this book as a manual for nurses is attested by the fact that it was introduced as the text book for nurses supervising the training of Health Visitors in France, under the direction of the Children's Bureau.

RICHARD A. BOLT, M.D.,
General Director, Amer. Child Hygiene Assn.

Food Inspection and Analysis. By A. E. LEACH AND A. L. WINTON. New York: John Wiley & Sons, Inc., 1920, 4 ed., pp. xix + 1090, pls. 42, figs. 128. \$8.50.

This manual, designed for the use of analysts, health officers, chemists, and food economists, has been revised and enlarged to the extent of 90 pages; new material having been added or substituted for material in

earlier editions. The former arrangement of chapters has been retained but the list of references at the end of chapters has been left out and, instead, more attention has been given to footnote references. As is stated in the preface, wherever possible the original papers referred to have been consulted and where this could not be done reliance has been placed in abstracts which appeared in "Chemical Abstracts" or in the "Experiment Station Record." A special feature is the final chapter by G. L. Wendt, "Determination of Acidity by Means of the Hydrogen Electrode," a method which, as pointed out, seems destined to play an important part in food analyses.

The book includes such subjects as food, its functions, proximate components, and nutritive value; general methods of food analysis including microscope and refractometer; milk and milk products; flesh foods; eggs; cereal grains; tea, coffee, and cocoa; edible oils and fats; sugar; as well as artificial food colors, food preservatives, artificial sweeteners, flavoring extracts, and substitutes.

Not only is the volume valuable for the analytical methods described but also for the large amount of information regarding properties and uses of foodstuffs and condiments, which it provides in convenient form.

Meats, Poultry and Game; How to Buy, Cook and Carve. BY EDOUARD PANCHARD. New York: E. P. Dutton and Company, 1919, pp. 134. \$3.00.

This book merits its sub-title "How to Buy, Cook and Carve" as it is full of many old, new and helpful suggestions under each heading. These are supplemented by unusually fine illustrations which bring out the desired points.

Part I is written very definitely and clearly but Part II, "A Potpourri of Recipes," would be rather difficult for an inexperienced cook to follow.

MARION EVANS DAKIN,
Pratt Institute.

BOOKS RECEIVED

- Everyday Mouth Hygiene.* Joseph Head, Dentist to Jefferson Hospital. Philadelphia: W. B. Saunders Co., 1920. \$1.00.
- Experimental Organic Chemistry.* Augustus P. West, University of the Philippines. Yonkers, N. Y.: World Book Co., 1920, pp. 469. \$3.00.
- Food Facts for the Homemaker.* Lucile Stimson Harvey. Boston and New York: Houghton Mifflin Co., 1920, pp. 314. \$2.50.
- Household Arithmetic.* Katherine F. Ball and Miriam E. West. Philadelphia. J. B. Lippincott Co., 1920. \$1.48.
- Household Arts for Home and School.* Anna M. Cooley. New York: The Macmillan Co., Volume 1, 1920, pp. 221.
- The Nation's Food.* Raymond Pearl. Philadelphia: W. B. Saunders Co., 1920, pp. 274. \$3.50.
- Transactions of the Tenth Annual Meeting.* American Child Hygiene Association, 1211 Cathedral St., Baltimore, Md. \$3.00.

BIBLIOGRAPHY OF HOME ECONOMICS

PERIODICAL LITERATURE

MISCELLANEOUS

The Origins of Civilization. J. H. Breasted, *Sci. Mo.*, 9 (1919), Nos. 4, pp. 289-316, figs. 23; 5, pp. 416-422, figs. 17; 6, pp. 561-577, figs. 19; 10 (1920), No. 1, pp. 87-105, figs. 18; 2, pp. 183-209, figs. 32; 3, pp. 249-268, figs. 18. In these William Ellery Hale lectures before the National Academy of Sciences in Washington, the author discusses the origin of civilization in the Nile valley in the old stone age and traces its development and spread through Asia Minor to Europe. To the Egyptians is ascribed the domestication of cereal grains (such as wheat and emmer), of flax, and of cattle, sheep, and other animals. The development of architecture is considered, and mention is made of clothing, agriculture, commerce, and many other matters. Although not prepared for students of home economics, this clear and well presented summary contains much information of interest to them.

Wages and Hours of Domestic Servants in England and Bavaria. U. S. Dept. Labor, *Bur. Labor Statis., Mo. Labor Rev.*, 10 (1920), No. 2, pp. 130-132.

Electrical Efficiency in the Home. B. Grey, *New West Mag.*, 11 (1920), No. 5-6, pp. 88-91, figs. 5.—Possibilities of equipment for different rooms of a house are discussed and a considerable amount of information given.

Domestic Science as an Opportunity for Sex Education. Lo Ree Cave, *Kansas State Board Health Bul.*, 16 (1920), No. 4, pp. 67-72. This paper was read at the Kansas Conference of Education, Washburn College, Topeka, May, 1920.

The New Visiting Housekeeper: Her Training and Her Work. Emma A. Winslow, *The Family*, May, 1920.

A Hampton Girl's Training. Carrie Alberta Lyford, *The Southern Workman*, May, 1920.

Child Welfare. *The Indian Journal of Sociology* (Baroda, India), Jan., 1920.

Posture Clinics Established by a School Nurse. Idabel Durgan, *The Commonhealth*, Mar.-Apr., 1920.

How Cooking Affects the Digestibility of Foods. Alzira Sandwall, *The Commonhealth*, Mar.-Apr., 1920.

Japanese Toys. M. Kimura, *Japan Mag.*, 10 (1920), No. 9, pp. 363-365, fig. 1. Information is given regarding the kinds of toys produced in Japan for domestic and foreign trade, as well as data concerning kinds of toys required for different markets.

A New Fibre. K. Hoshino, *Japan Mag.*, 10 (1920), No. 9, pp. 345-347. A new fibre plant (*phyllospadix scouleri*), one of the marine algae of Japan, has been found promising as a source of fibre for paper making and for spinning mixed with cotton.

Series of Photographs from the first Exhibition of American Textiles, Costumes, and Mechanical Processes. *Nat. History*, 19 (1919), No. 6, pp. 631-654. The exhibit was held at the American Museum of Natural History, New York, Nov. 12 to Dec. 1, 1919. The legends accompanying the pictures were prepared by Herbert J. Spinden.

Creating a National Art. Herbert J. Spinden, *Nat. History*, 19 (1919), No. 6, pp. 623-630. In a postscript to the article data are given regarding the American Museum of Natural History (New York) Exhibition of Industrial Arts in Textiles and Costumes.

American Textiles. M. D. C. Crawford, *Gen. Fed. Mag.*, Feb.-Mar., 1920.

The Microscopical Identification of Commercial Fur Hairs. L. A. Hausman, *Sci. Mo.*, 10 (1920), No. 1, pp. 70. The relative durability of different furs, the nature of the hair, and its identification by microscopical methods are discussed, and much general information regarding furs and their nomenclature and use is given.

The Glass Industry in America. A. Douglas Nash, *Gen. Fed. Mag.*, Feb.-Mar., 1920.

How the Chinese Make Their Beautiful Enamel Work. Sidney J. Hall, *Sci. Amer.*, cxvii, No. 10, March 6, 1920. This note on Cloisonné Enamel is brief and popular.

CERAMICS

Journal of the American Ceramic Society, 1 (1918):

Ground Coat Enamels for Cast Iron, H. F. Staley, No. 2, pp. 99-112.—Comparative studies of different enamels. Paper is followed by discussion.

Alabaster Glass: History and Composition, A. Silverman, No. 4, pp. 247, 261 (figs. 1).—Bibliography is appended.

The Action of Acetic Acid Solutions of different Strengths on a Sheet Steel Enamel, L. J. Frost, No. 6, pp. 422-428 (fig. 1).—In this paper, of interest in connection with enamelware for cooking purposes, results of some tests are reported. According to the author's experiments, a 4 to 5 per cent solution by volume of "such an acetic acid as would probably be used for testing at most cooking utensil plants is well up in strength as regards its action on the enamel surface. This per cent acid is also of about the same strength as the strongest vinegar, which is probably the most destructive agent to which an enameled cooking utensil is subjected in ordinary use." In the discussion following this paper the statement is made that "tartaric acid from cooking grapes, as in making grape marmalade, has a much more severe action on enamels than acetic acid."

Preparation and Application of Enamels for Cast Iron, H. F. Staley, No. 8, pp. 534-555 (figs. 4).—Discussion of methods followed in enameling bath tubs.

Some Types of Porcelain, F. H. Eiddle and W. W. McDanel, No. 9.—606-627 (figs. 13).

The Control of the Luster of Enamels, H. F. Staley, No. 9, pp. 640-647.

Note on Certain Characteristics of Porcelain, A. V. Bleininger, No. 10, pp. 697-702 (fig. 1). Formulae given for enamels such as are used for making enamelware goods.

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RECENT CHANGES IN BRITISH EDUCATION¹

SIR AUCKLAND GEDDES

British Ambassador to the United States

May I preface my short account of certain changes which are taking place in British education by a short profession of faith?

I do not believe that in matters educational any country can copy the forms and machinery of education thought out and elaborated by another country. I have held to this faith with tenacity and not without pugnacity on occasions when I as an educationist was asked to adopt methods in vogue in other countries. I said then, as I say now, "A system of education to be effective must grow out of the soil, out of the genius of the people. The most I can do is to familiarize myself with the methods and ideals of other countries and then in its own good time my mind will sift out the good in them from the bad, the applicable from the inapplicable, and will apply them to its own problems."

Knowing that I hold this belief I feel sure that you will exonerate me from any supposed desire to thrust upon you for acceptance any educational form, pattern, or ideal, and you will accept me for what I am, a simple reporter, who is glad to have this opportunity of telling you of what he knows, has seen, and thinks.

One further warning and then my path is clear. No reporter who deals with a subject about which he is an enthusiast can, however hard he may try, avoid coloring to some extent, in its passage through his mind, the matter which he reports. I therefore ask you first to credit me with

¹Address delivered at the National Citizens Conference on Education, Washington, D. C., May, 1920. Printed by permission of the Commissioner of Education.

a desire to report accurately and fairly, next to debit me with a certain incapacity to report otherwise than as I see things after they have been soaked in the dye vats of my understanding.

Here at once we come to the very heart of the problem of education, for the period of education of the individual is marked, whether we will it or no, by the transformation of the mind, colorless perhaps in early childhood (though I am not quite sure of that), into the rich and inexhaustible dye vat which we call the educated mind. There are other processes in progress simultaneously, but the end of education is to turn out minds that see facts in a certain color. You professional educationists may question the accuracy of my belief and may say that I am juggling with words, that I am calling prejudices colors and that everyone knows the effect of education is to get rid of prejudices. I used to believe that, only I know now that I was wrong. The effect of education is to produce a set of super refined prejudices which are not really prejudices in any ordinary meaning of the word, so I shall content myself with repeating that the educated mind is an inexhaustible dye vat. It will dye anything.

The path is now clear so let us begin. The war showed us Britons many things in a new light and one of the most important things that we saw or thought we saw was that the old social order which had stood the test of time was not going to stand much longer and that in order to make the transition from the old to the new possible without catastrophe we had to get busy first to bring every adult female as well as male into the circle of responsible citizens, next to do our utmost as speedily as possible to equip those citizens, or at all events the recruits to their numbers, with educated minds.

It was this thought that made Mr. Fisher, British Minister for Education, say in February, 1917—"The proclamation of Peace and Victory will summon us not to complacent repose but to greater efforts for a more enduring victory. The future welfare of the nation depends upon its schools."

Then we who were in Parliament set to work to modify the law to give the following results:

1. To extend the age of compulsory attendance without exemption to 14, or to 15 or 16 by local by-law.
2. To provide medical inspection and treatment and physical welfare, before, through, and after school to the age of 18.
3. To establish nursery schools for children between two and five and six.

4. To establish a system of compulsory continuation (part time) school attendance ultimately to 18.

5. To arrange for the promotion of poor but able pupils by a system of scholarships and maintenance grants past the higher rungs of the educational ladder in the hope that in the future the nation may have the best mental capacity of all its sons and daughters to draw on for its service instead of having to content itself with such brains as a comparatively limited class happen to produce.

Incidentally we made a certain number of administrative changes. We concentrated the supervision over the activities and welfare of children and adolescents in the hands of elected local education authorities. We also dealt with the inspection and supervision of private schools. Next we did our best to decentralize control by preserving and strengthening the independence of local authorities, by extending their powers and functions. The control of these authorities was designed to be made effective by central insistence on minimum standards with encouragement through grants to advance as far as possible. Finally the cost of education was divided equally between local and national taxes.

This represents in brief form our attempt in the field of education to provide the facilities to make possible the realization of the ideals for which the war was fought. I find it difficult to conceive of any educational scheme more fully imbued with the spirit of sane democracy.

One of our ideals has perhaps been more unsparingly ridiculed than the rest—the proposal to found nursery schools. I notice the ridiculers are either childless or else are the sort of people who maintain at considerable expense in their own homes the very sort of nursery school which we are setting up for the use of all. It is easy to make merry and to draw pictures of tiny tots with horn rimmed spectacles toiling with great tomes, but the facts are otherwise. The purpose of the nursery schools is not even to teach the three R's, but, by sleep, food, and play to provide the opportunity for little children to lay the foundations of health, habit, and a responsive personality, which is just what every nursery in the world is supposed to be doing.

I have not time to enter into many details, but it is necessary for me to say this—that physical training is to form part of the weekly work of each pupil up to the age of adolescence.

The secondary school (age range at least 12–17, may be 10–18) has not been neglected and the arrangements there are of considerable interest. Their work tends to fall into two parts, the generalized part up to

about 16 and the part which may be specialized above that age. The curriculum for the generalized part may be summarized as follows:

This must provide instruction in the English language and literature, at least one language other than English, geography, history, mathematics, science, and drawing. The instruction in science must include practical work by the pupils. In addition, either within or without the formal curriculum, provision must be made for organized games, physical exercises, manual instruction, and singing.

For girls, needlework, cookery, laundry work, housekeeping, and household hygiene are compulsory subjects.

For the specialized part of the curriculum, if that be taken, the work is founded upon the general education before 16 and consists of specialization along lines on which the pupil has already shown ability. In every course there must be a substantial and coherent body of work taken by all pupils in one of these three groups: (A) science and mathematics, (B) classics, viz: the civilization of the ancient world as embodied in the languages, literature, and history of Greece and Rome, or (C) modern studies, viz: the languages, literature, and history of the countries of Western Europe in medieval and modern times and the settlement and development of North and South America.

In all advanced courses adequate provision has to be made for the study and writing of the English language and of history and geography.

A word perhaps may be useful on the subject of science teaching in the secondary schools. It has been laid down that "the course should be self contained and designed to give special attention to those natural phenomena which are matters of every day experience." In fact the object of the science course is not to train specialists but to give some acquaintance to each child with the principles involved in the daily observed phenomena, from the ringing of an electric bell to the construction of a modern building, and to give to enquiring eyes a first peep into the fairyland of science, so that those who have special aptitude to tread its thorny and stony tracks delight in and may not be ignorant of the paths which lead in its direction.

Beyond the secondary schools stand the universities, but of them I have not time today to speak. Not that there is nothing to say about them. There is more perhaps than ever before. They are palpitating with new life, new thought, new energy. But of one side of adult education I must speak—adult education for people who have to earn their daily bread and can only devote a small part of each day to educational

studies. I do not mean technical education; that on the whole is fairly well provided for in most parts of the country—but historical, political, economic, and cultural education. There is a widespread and growing demand for this in all parts of the country. National machinery has not yet been elaborated to meet this demand, but in countless ways in countless places facilities are being provided. Soon the situation will begin to clarify itself and as it clarifies will come a coherence that is still lacking.

So much for the machinery. I have sketched it in its broadest outlines only, because the machinery by itself is nothing—it is the spirit which gives life, and that you may begin to understand one spirit which inspires our educational machinery I must ask you to bear with me while I describe for a few moments the ideals which animate the new Britain. First you must realize that Britain is thoroughly democratized. Its Government is in fact more immediately and directly under the control of the people than that of your country. Outside observers are inclined to think that because the head of our State is a King there is some mysterious subtraction from the people's power through what I hear some of you call "the King business." It is not so. We like calling our hereditary president a King because this is his home with a wealth of association and because we have the deepest affection for him and admiration for his and his family's service to the State; but in truth and in fact King George has a good deal less direct power than the occupant from time to time of the office of President of the United States. Next, our Cabinet is day by day responsible to Parliament. If it cannot find a majority there to support it on all matters of principle it must go out of office or else get a new Parliament that will support it returned by the electors; and, finally, the Government has to appeal to the people through a dissolution of Parliament at least once in five years and when it does appeal practically every man and woman has a vote.

The day to day responsibility of the Cabinet to Parliament and through Parliament to the people has this effect—politics are a staple interest at all times to all men and all women. We have, of course, periods of more intense interest and periods of less, but the general level of interest is fairly high. These facts color the whole of our educational practice. Education with us is tending to become less and less directed towards the conscious end of simply fitting a man to earn his daily bread. Man does not live for or by bread alone. If he does he is hardly worth keeping alive. He is a member of a family, a trades union, a club, a

city, a nation, a church. He is a human personality with something more than a pair of hands condemned to toil at will of another. He has intellectual and aesthetic taste (only too often cramped and undeveloped) and moral principles. He believes in liberty, justice, and public right and has shown himself prepared to give his life for these things. Each is a citizen and every citizen, regardless of his social position or wealth, has claims which are prior to all economic claims on him—claims of opportunities to enable him to fulfill his manifold responsibilities as a member of widening social groups from the family to the community. His responsibilities are no less if he be a ship's riveter than if he were a naval architect. The locomotive fireman is no less a citizen than the railway director or the most wealthy railway shareholder.

In short, the aim of education in Britain cannot be vocational—it must be nothing less than a preparation for the whole of life. If you followed my brief summary of the machinery of education you will have noticed the stress laid both in primary and secondary schools upon the English language, English literature, geography, and history, with, in the later stages, some science and some knowledge of at least one other country. You will have noticed, too, the drawing, the music, singing at all events, and games—games for character, organized games for team work—all directed towards the making of the citizen.

There is, of course, a danger which has to be avoided through the spirit in which this education is given. We all know (who does not?) the type of half baked, half educated puppy, male and female, who, from the pinnacle of doleful experience attained between the age of 20 and 25, looks down with pitying contempt on all the grown and hearty men who have dared to say a good word for life since the beginning of the world. Young prophets—and who that is young is not something of a prophet—tend to be prophets of woe, which they tell us can only be escaped by what we elders call revolution. Young thinkers, speakers, and writers are apt to suffer most uncomfortably from possession by blue devils which they assure us can only be exorcised by blood. This is no new phenomenon.

Let me quote from Robert Louis Stevenson:—"It would be a poor service to spread culture, if this be its result, among the comparatively innocent and cheerful ranks of men. When our little poets have to be sent to look at the ploughman and learn wisdom, we must be careful how we tamper with our ploughman. When a man in not the best of circumstances preserves composure of mind and relishes ale and tobacco and his wife and children; when a man in this predicament can afford a

lesson by the way to what are called his intellectual superiors, there is plainly something to be lost as well as to be gained by teaching him to think differently. It is better to leave him as he is than to teach him whining. It is better that he should go without the cheerful light of culture, if cheerless doubt and paralyzing sentimentalism are to be the consequence. Let us by all means fight against the hide-bound stolidity of sensation and sluggishness of mind which blurs and discolorizes for poor natures the wonderful pageant of consciousness. Let us teach people as much as we can to enjoy and they will learn for themselves to sympathize; but let us see to it, above all, that we give these lessons in a brave vivacious note and build the man up in courage while we demolish its substitute, indifference."

I hope now that meaning is gradually emerging from my heterodoxy—that the cultured mind is like a richly filled dye vat and that the object of education is to select the dyes. A moment's thought and we can name four of them—courage, cheerfulness, sympathy, and some humility. These are spiritual dyes; there are also historical pigments which are so different that they are really of a different kind and should be thought of separately. To make my meaning plainer let me take an example from my own experience. Twenty and more years ago there were two brothers, one largely educated in England, the other in Scotland. The English educated, as a boy, hated and despised the French; the Scottish educated, at the same age, admired and sentimentally loved them. Both minds were approximately equally cultured but they were differently charged with color. The explanation is simple; for centuries England and France were enemies, Scotland and France allies. The school histories of England and Scotland reflected this and the result was as I have said. So you can pass through the whole range of the results of education and you will find the same sort of thing true.

Anyhow beyond the machinery of education and the avowed purpose of education and the spiritual aspect of education stands the color of education. As a matter of fact the most vitally interesting thing to foreigners in connection with any national education is this thing I call its color. It ultimately matters more to your State Department than any other thing in the whole range of their manifold duties to know the color of the education being given in the British Empire, in France, in Germany, in all the countries of South America, yes, in all the countries of the world, for if your Secretary of State knows, let us say, the French color of education, he will know how that nation will be thinking ten years hence.

Now the present British educational color I can tell you something about. It is strongly anti-militarist and is, as it has always been, intensely friendly to you. As a matter of fact it is almost too sentimental about you. It presents you so favorably as to misrepresent you slightly and the result is that the common people of England are apt to be surprised, perhaps even a little disappointed when you are most yourselves, but at any rate it is a most friendly and appreciative color. Yet I would be less than candid if I did not say this:—The teachers of England are in the main young men whose minds have been ploughed and harrowed by the war. Their eyes see things less through a veil of tradition and custom, and if there ever were a time that could be fairly called anxious in this particular respect it is this time. The same I believe is true elsewhere with the parts reversed. Now is the day both for political and educational statesmanship so to think and so to act that the color of the historical education given in the schools of all lands is fair and true and sympathetic to the real virtues that every great nation possesses and, when it has to deal with their vices and backslidings as it must (every nation has black pages in its history), it should see that the perspective is kept true and fair and the extenuating circumstances honestly presented.

There is still one thing more. Beyond the machinery effects of education, beyond its avowed purpose, beyond its spiritual effect, beyond its color, stands last—greatest and most precious of all—the care of the ego. I used to tell my assistants to remember that those ten words of Walt Whitman's "Nothing, not God, is greater to one than oneself is" contained if they would only dig deep enough into them all the Law and the Prophets for them to remember in relation to their pupils.

There is another saying of Walt Whitman's that a teacher has to remember—"There is no object so soft but it makes a hub for the wheel's universe." Stevenson's comment on this is—"Rightly understood, it is on the softest of all objects, the sympathetic heart, that the wheel of society turns easily and securely as on a perfect axle."

This completes my survey. For the heart of the British public, made wonderfully sympathetic by the war, shining through its Department of Education, is the organ which will protect and nourish the millions of young British egos, each more important to itself than God—remember they are young—and will provide the axle upon which the great educational machine of its own creating will revolve as it shapes and molds the future, not only of the pupils entrusted to its care, but also of the nation which it is my high privilege to represent here among you.

THE FARM WOMAN'S PROBLEMS¹

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THE FARM WOMAN TELLS HER OWN STORY

By a singular anomaly the census places farm women with other homemakers in a class of those having "no occupation." The testimony of the ten thousand farm women who participated in a recently completed farm home survey would indicate that the farm woman might be better described as one having ceaseless occupation, so varied and insistent are the demands made upon her.

The Department of Agriculture, in its desire to extend to farm women the most practical and acceptable assistance possible, undertook, in coöperation with the state agricultural colleges and farm bureaus, to learn from farm women themselves what were their real problems so that the coöperative extension service might be guided in doing its part toward the solving of those problems.

This survey is believed to be one of the most significant pieces of work yet undertaken in the field of farm home studies. The 10,044 records received from farm women were secured largely by home demonstration agents between June and October, 1919. These present convincing evidence as to actual living and working conditions under which farm women are meeting their responsibilities as partners in the farming business, and unmistakably point to certain definite kinds of assistance which the coöperative extension service can extend to rural homes of the northern and western states.

How the study was made. It may be asked to what extent the homes surveyed are typical of farming conditions over the 33 northern and western states in which the studies were made. It was requested that in selecting the counties to be surveyed the following plan be carried out: (1) choose the most typical farming counties of each state; (2) take one or more of the most typical farming communities in each county; (3) secure a record from every farm home in the locality selected, irrespective of size, farm tenure, prosperity of farm family, or other conditions; (4) select, if possible, a locality containing from 35 to 50 homes; and (5) include in the survey none but bona fide farm homes.

¹ Presented at the Thirteenth Annual Meeting of the American Home Economics Association, Colorado Springs, June, 1920. Revised figures will appear in a Department bulletin entitled "A Farm Home Survey."

A study of the returns shows that these requests were fairly well complied with. The figures obtained on the size and type of farms surveyed and the relative percentage of tenantry and farm ownership agree so closely with the figures shown in the census of 1910 for the corresponding geographic section as to confirm the belief that the localities were comparatively representative, although it seems probable that a somewhat better response was obtained from the more progressive element of the communities, and that in consequence the answers presumably show conditions rather above the average.

In considering the details of the survey that follow, it should be noted that in no single instance did all of the women answer any one question. For example, 9767 people answered the question regarding washing and ironing; 9400 stated that this work was done at home, making an average of 96 per cent.

It is evident that in some cases, women filling out the blank laid it down at some interruption and in taking it up again omitted certain questions. Many persons, apparently, assumed that if they omitted a question entirely they were indicating with sufficient clearness that the conditions under discussion did not exist in their families. For example, a large number failed to answer questions bearing upon the number of children of various ages, apparently because they had no children. The same is true of questions dealing with members of the family incapacitated by old age or illness; hired men and hired girls; the vacations or "days off" of the homemaker; and other points of information. It has, therefore, been necessary to base the average or percentage in each case upon the number of explicit answers instead of on the total numbers of surveys received, a procedure which results in certain instances in figures somewhat higher, it is believed, than actual facts warrant.

One needs but to follow the average woman of the survey through a week's routine to gain some conception of the vitality and skills called into play by her duties as cook, seamstress, laundress, and nurse, family purchasing agent, teacher of her children, and factor in community life, as well as producer of dairy, garden, and poultry products.

In considering the figures of the survey one should keep constantly in mind the two sides to the shield. One represents a favored small percentage of these 10,044 women whose surroundings, working conditions, and social experiences reach high levels of comfort and progress in farm home life. The other and larger percentage less fortunately

placed may give a somewhat exaggerated impression of hardship, unless one thinks of the motive back of the work of wife and mother and the compensations that come to every homemaker in her round of activities for the happiness and comfort of her family. Anyone who has experienced the satisfaction of living in the open country knows that the average farm woman is more fortunately placed in many ways than her average city sister. Studies of living and working conditions of city homemakers bring to light in many homes not only handicaps in home equipment and conveniences but an environment detrimental to health, happiness, and development. The varied interests of the farm woman's life, her contacts with growing things, her enjoyment of seasonal changes in nature, and her freedom from noise, dust, and confusion are not to be lost sight of in considering her comparative opportunity with homemakers of urban communities. It is not, however, the purpose of this discussion to go into these comparisons, but to present, to those interested, conditions as the survey reflects them. That marked progress has been made during the past few years in raising rural home standards of living can not be questioned. Every community boasts some homes which exemplify the fact that the country today with a reasonable amount of prosperity and good management offers all of the freedom and independence of rural living with most of the hardships of former days eliminated. The telephone and the automobile free the farm family from isolation. Modern machinery for farm and home takes the drudgery from kitchen and field. Rural engineering has mastered the problems of sanitation for the farm home. Community centers make possible wholesome and inspiring social contacts and mediums of self-expression. With all these modern resources which are taken advantage of and enjoyed by many progressive and prosperous farm families, there is still a large percentage of the total of farm homes in this country which has not yet, according to the figures of the survey, felt to any marked degree the influence of these life-giving factors. It is the realization of this need that stimulates the Department of Agriculture and the state colleges of agriculture to offer the service of extension work with women, a work which would not be needed if all homes had reached the high state of comfort and efficiency attained by the few.

Economic importance of the farm woman. The survey indicates that much loss to family and community through waste of woman power could be prevented by a reasonable amount of planning and well directed investment in modern equipment.

Everywhere we hear of the economic importance of a contented rural population willing to stay on the land and help to build it up. Perhaps the greatest factor in bringing this about will be the healthy, alert, and expert homemakers who, with the other members of the farm family, will see to it that a part of the increased income from the farm is directed toward the improvement of the home as a means of contentment and stimulus for farm work. Economists of our country, seeing the steady migration city-ward, recognizing the dearth of farm labor as a limiting factor in production, and connecting this with the isolation and inconvenience of rural living conditions, are pointing out that where these exist it is doubtful business policy to use increased income to buy more land with heavy interest charges against it rather than to spend part of that income in raising standards of living so that farm women may find contentment in comfortable homes and young people will not go to the cities in search of attractive living conditions and a satisfying social life.

The independent, venturesome spirit of American youth has in no way expressed itself more characteristically than in the thousands of farm boys and girls who have turned courageous young backs upon a certain type of farm life which offers little that youth craves. This may be a disguised blessing, as the country boy or girl, who struggles free of one environment for another which seems to offer greater opportunity, may be a factor in preventing the development of the peasant type found in countries where generations of one family live on the same plot of land, not because it yields a satisfying life, but because of the difficulties and uncertainties of change.

Hence the interest of the Department of Agriculture in the returns from these studies as to labor, working equipment, and compensations of the farm woman is as practical and as coldly calculating as its interest in farm studies regarding the labor, machinery, and crop returns of the farmer, and for the same general reasons.

SOME FACTS FROM THE SURVEY

Modern equipment brings health and leisure. A walkout might be foreshadowed in some industries, where love and service were not the ruling motives, by conditions brought out in table 1 which show that the average working day, summer and winter, for over 9000 farm women is 11.3 hours, and that 87 per cent of 8773 women report no vacation during the year.

TABLE 1
Length of the working day and vacation of farm women

SECTION OF COUNTRY	SUMMER		WINTER		WOMEN HAVING VACATION	LENGTH OF VACATION
	Work	Rest	Work	Rest		
	hours	hours	hours	hours	per cent	days
Eastern	13.0	1.6	10.7	2.4	13	12.4
Central	13.2	1.5	10.5	2.3	12	10.8
Western	13.0	1.8	10.2	2.4	13	16.4
Average	13.1	1.6	10.5	2.4	13	11.5
Number of records	9530	8360	9164	8164	8773	1241

Table 2 shows the extent of certain household tasks. Some of these might be eliminated if the principles of modern business were applied, and labor and time spent on others might be lessened if the farmhouse were as well equipped as the up-to-date barn, the appliances of which the farmer looks upon as so much currency with which to buy efficiency.

TABLE 2
Farm women's household duties

SECTION OF COUNTRY	ROOMS TO CARE FOR	STOVES TO CARE FOR	KEROSENE LAMPS	WATER TO CARRY		DO OWN WASHING	DO OWN SEWING	DAILY MENDING	BREAD BAKING
				Percentage	Distance				
			per cent	per cent	feet	per cent	per cent	hours	per cent
Eastern	9.7	1.3	79	54	23	94	86	0.5	89
Central	7.7	1.3	79	68	41	97	94	0.6	78
Western	5.3	2.5	77	57	65	97	95	0.5	97
Average	7.8	1.6	79	61	39	96	92	0.6	94
Number of records	9871	9210	9830	6511	6708	9767	9724	8001	9614

Lighting. The installation of a modern lighting system would release some time in the 79 per cent of 9830 homes where kerosene lamps are used. The initial cost would be small when weighed against conveniences and comfort.

Heating. Nine thousand of the seven-room houses (average) are supplied with from one to two stoves, not counting the kitchen range. These add to the daily work of 54 per cent of the rural women who, when heat is needed, not only carry into the house the coal or wood to feed these stoves, but, according to their statements, kindle the fires in the morning and keep the home fires burning throughout the day. This

condition could be greatly improved by some type of modern equipment placed in the basement. By this means the whole house could be kept comparatively warm and usable throughout the winter, and congestion avoided which results when the winter living quarters are limited to the kitchen and one or two other rooms. The normal town dweller keeps all of the rooms of his house comfortably warm. Too frequently the farm family contents itself with going to bed in chilled rooms. Breaking the ice in the water pitcher on rising in the morning is not entirely a matter of tradition. The family sometimes fails to connect lack of warmth and facilities for bathing and dressing with ailments and resultant doctor bills which expense would in many cases pay for a modern heating system.

Power. As power on the farm is the greatest of time and labor savers for the farmer so power in the home is one of the greatest boons to the housewife. Of the total number answering the question, 48 per cent reported power for operating farm machinery. When we consider that it is often a simple matter to connect the engine used at the barn with household equipment it seems a singular fact that but 22 per cent of the farm homes reporting have this advantage. Power for such frequently recurring tasks as churning and running the washing machine would greatly relieve the farm woman and give her a satisfying sense of modern efficiency. The eastern section reports 50 per cent power on the premises, and 12 per cent in the home. One state reports seven per cent, and another, the lowest, two per cent of power machinery in the home. Only one state shows a larger percentage of power in the home (24) than on the farm (19). One state, the highest, shows 47 per cent of power in the home and 72 per cent on the farm. The one next highest shows 44 per cent in the home and 78 per cent on the farm.

Running water. It is frequently stated that running water is the pivot upon which much modern convenience and comfort turns. Of those reporting, but 32 per cent of the homes have running water; that means water drawn from a faucet and implies that water may be in other rooms besides the kitchen. Sixty-five per cent of the homes have water in the kitchen only, this means a pump or possibly a rubber hose attached to a barrel located inside or outside of the kitchen. However, in 60 per cent of the homes there is a sink with drain even though in many cases the water used at the sink has to be carried into the house by the pailful. In 61 per cent of the homes into which the water must be carried this work is done by women. Of 6784 women answering the ques-

tion, 20 per cent have bathrooms in their homes. The state ranking highest reported 48 per cent, and the one ranking lowest 3 per cent of homes having bathtubs. No one single thing brings so much relief to farm women in meeting their endless tasks as does the use of running water. It is undoubtedly the greatest need in rural home life today on more than two thirds of the farms. The advent of the bathroom, the indoor toilet, and other conveniences dependent upon running water bring not only untold release from drudgery but a sense of pride and ownership which is as important a factor in a woman's success in her daily round of work as is modern machinery for the success of the farmer.

TABLE 3
Equipment in farm homes surveyed

SECTION OF COUNTRY	RUN- NING WATER	POWER MACHIN- ERY	WATER IN KITCHEN	WASH- ING MA- CHINE	CARPET- SWEEP- ER	SEWING MA- CHINES	SCREEN- ED WIN- DOWS AND DOORS	OUT- DOOR TOILET	BATH TUB	SINK AND DRAIN
	<i>per cent</i>	<i>per cent</i>	<i>per cent</i>	<i>per cent</i>	<i>per cent</i>	<i>per cent</i>	<i>per cent</i>	<i>per cent</i>	<i>per cent</i>	<i>per cent</i>
Eastern	39	12	85	52	58	94	95	87	21	80
Central	24	29	60	67	46	95	98	93	18	52
Western	36	22	45	49	29	95	91	86	23	44
Average	32	22	65	57	47	95	96	90	20	60
Number of records	9320	9080	6092	9472	9513	9560	9667	9580	6784	9334

Hired help for the homemaker. The survey shows the passing of the "hired girl," once so important a factor in the economic and social life of the farm home. The answers received regarding help by the month and by the day are, as noted earlier, somewhat ambiguous. We interpret them to mean, however, that the number of homes employing hired women the year round is almost negligible, while about 14 per cent of the 8693 families reporting employed hired women for short periods perhaps during the peak of the heavy summer work. The average period during which such assistance is available is 3.6 months, the largest number of hired women and the shortest term being in the eastern section, the smallest number of hired women and the longest term of service being in the western section. From 8 to 10 per cent of the homes seem to employ women to help by the day, an average of $1\frac{1}{2}$ days per week. This assistance seems to be mainly for laundry work and cleaning. The percentage of homes employing such help by the day is larger in the eastern section than in the central and western

sections. The growing scarcity of domestic help only further emphasizes the necessity for simplifying the housework and providing the farm home with all modern labor saving devices.

Outdoor work. In addition to her various duties in the house the farm woman is a productive worker on the farm, as evidenced by the figures shown in tables 4, 5 and 6; 36 per cent, of the women reporting, help with the milking of the family herd; 56 per cent take most of the care of the garden; 81 per cent care for the chickens; 25 per cent help with the livestock; and 24 per cent help in the field an average of 6.7 weeks during the year.

TABLE 4
Women helping in outdoor work and keeping accounts

SECTION OF COUNTRY	HELP WITH LIVESTOCK	HELP IN FIELD	WEEKS PER YEAR	CARING FOR GARDENS	KEEPING FARM ACCOUNTS	KEEPING HOME ACCOUNTS
	<i>per cent</i>	<i>per cent</i>		<i>per cent</i>	<i>per cent</i>	<i>per cent</i>
Eastern	24	27	8.5	41	28	23
Central	26	22	4.9	67	34	33
Western	27	23	6.7	57	33	34
Average	25	24	6.7	56	32	30
Number of records	9365	9179	2196	9526	8730	8750

TABLE 5
Woman's part of the work of the dairy

SECTION OF COUNTRY	COWS PER FARM	WOMEN HELP MILK	WOMEN WASH PAILS	WASH SEPARATOR	MAKE BUTTER	KEEP RECORDS	SELL BUTTER	HAVE BUTTER MONEY
		<i>per cent</i>	<i>per cent</i>	<i>per cent</i>	<i>per cent</i>	<i>per cent</i>	<i>per cent</i>	<i>per cent</i>
Eastern	8.0	24	85	50	43	22	31	9
Central	6.8	45	93	76	66	30	33	9
Western	4.8	37	85	63	74	36	33	16
Average	6.8	36	88	65	60	29	33	11
Number of records ..	9670	9342	9361	8817	9190	6356	8498	5354

The dairy. Table 5 shows that 33 per cent of the farm women reporting make butter to sell. Since butter making either for home use or for sale adds one item to the farm women's overcrowded schedule, it would seem to be justified only when a good creamery is not within reach. Experts advise that normally the best utilization of milk is to send the surplus to a creamery, after reserving an ample supply for

home use, as the income from the dairy herd is usually greater when the produce is handled by the creamery than when butter is made at home.

Poultry. The studies of poultry specialists parallel the figures in table 6: that 81 per cent of all poultry flocks in the country are cared for by women, with the largest per cent (89) in the Middle West.

Accounts. Getting the most from a dollar and making sure that the home industry pays is recognized as an essential part of good business by 30 per cent of those answering the question regarding household finances, who stated that they were keeping accounts (table 4). Thirty-two per cent were keeping farm accounts. The records of those reporting show that 11 per cent of those selling butter and 16 per cent of those selling eggs have the money for their own use.

TABLE 6
Care of poultry; records kept and money returns

SECTION OF COUNTRY	WOMEN CARING FOR POULTRY	AVERAGE SIZE OF FLOCK	WOMEN HAV- ING POULTRY MONEY	WOMEN HAVING EGG MONEY	WOMEN KEEP- ING RECORDS
	<i>per cent</i>		<i>per cent</i>	<i>per cent</i>	<i>per cent</i>
Eastern	69	90	13	16	38
Central	89	102	25	16	51
Western	84	71	21	17	41
Average	81	90	22	16	45
Number of records	9477	9742	8312	8324	8628

Community. Table 7, indicating an average distance of 5.9 miles to the nearest high school, 2.9 miles to the nearest church, and 4.8 miles to the nearest market, shows that country people are far enough from the center of trade, social, and religious activities to tempt the spirit of individualism and to put their neighborliness and piety to the test. It points to the importance of pooling individual interest in common community enterprises such as canning kitchens, buying centers, markets, laundries, salvage shops, and sewing rooms as well as social centers for lectures, community sings, dramatics, and games, which, if properly handled, break down the isolation of country homes and make possible the accomplishment of many otherwise difficult tasks, with a saving of time and labor for the housewife, and often an opportunity for increased income as well as recreation for the entire family.

The automobile contributes materially to community life by reducing the distance factor. It will be noted in table 7 that an average of 62 per cent of farms of the 9545 reporting own cars, with the largest (73) in the Middle West. The telephone also helps to overcome distance in 72 per cent of the 9742 homes reporting. Again the Central West shows an advance with 85 per cent of the total number reporting.

Health. Fortunate is the farm family whose members know the rudiments of caring for the sick and have an emergency kit fitted up and at hand.

According to figures in table 7, the average farm home is more than five and one-half miles from the family doctor, nearly 12 miles from a trained nurse, and about 14 miles from a hospital. These distances are

TABLE 7
Distances, automobiles, and telephones

SECTION OF COUNTRY	DISTANCE TO DISTRICT SCHOOL	DISTANCE TO HIGH SCHOOL	DISTANCE TO CHURCH	DISTANCE TO MARKET	DISTANCE TO FAMILY DOCTOR	DISTANCE TO NEAREST HOSPITAL	DISTANCE TO NEAREST TRAINED NURSE	FAMILY USE AUTO	HOUSES HAVE PHONES
	miles	miles	miles	miles	miles	miles	miles	per cent	per cent
Eastern	1.2	4.3	1.9	3.1	3.5	12.8	9.9	48	67
Central	1.6	5.1	2.6	4.6	4.9	12.7	11.8	73	85
Western	1.7	9.6	5.1	7.7	10.4	17.7	15.5	62	56
Average	1.5	5.9	2.9	4.8	5.7	13.9	11.9	62	72
Number of records. . .	9627	9767	9726	9708	9837	9605	9463	9545	9748

shortest in the eastern section and longest in the western section. This means that even though the farm home be provided with an automobile and a telephone, the farm family may be obliged to act unaided in case of sickness, childbirth, or serious accident, and that its members perhaps need more than ordinary training to prepare them for such exigencies.

Twelve to fifteen per cent of the total families reporting recorded at least one person entirely or partially incapacitated by old age or chronic illness, although on this point there was some ambiguity in the answers, as previously stated.

Along with proper nutrition, clothing, and exercise, sanitary conditions have an important bearing on the health of the children and adults on the farm. On the basis of 9580 reports, 90 per cent of rural homes still have an outdoor toilet. Only 20 per cent (6784 answering) have

bathtubs and this does not necessarily imply hot water in connection. Almost universally the houses are screened, as indicated by the 96 per cent of 9667 homes reporting. The desirable screened kitchen porch is found, however, in but 32 per cent of the 9502 homes reporting.

Children. Among the surprises in tabulating the surveys was the small number of children in farm homes; 7467 reports show an average of but 1.18 under 10 years of age for each home, and but 0.89 between 10 and 16 years of age for each home. It may be of interest here to note that the number of children in rural homes of the East falls below the countrywide average, the report showing 0.9 under 10 years and 0.77 between 10 and 16 years, on a basis of 2573 reports, while that in the western section is the highest, with 1.4 under 10 years (1734 reports) and 0.97 between 10 and 16 years (1923 reports).

While there may be some doubt with reference to the figures regarding children, as has been indicated, in any event child life is an important factor in rural districts, and for the future of our agriculture, if for no other reason, an intelligent effort should be made and as much money expended to safeguard the child life on the farms as to safeguard other life that has to do with building up the farmstead. A campaign to bring the child life, the most precious on the farm, up to standards of nutrition and development should excel in intensity campaigns in the interest of cow testing or poultry culling, since a large amount of the underdevelopment and malnutrition in rural children, irrespective of the prosperity of the homes from which they come, has been revealed by the recent weighing and measuring tests.

The entire purpose which animates the work of the coöperative extension service as it pertains to the home is to help the homemaker to so arrange the various departments of her housekeeping that she may secure for herself, her family, and her community the highest possible degree of health, happiness, and efficiency. Hence the facts in this survey become a challenge for increased coöperation with the farming people in placing housekeeping on as sound an economic basis as farming itself.

Sidelights. Interesting sidelights revealing what was really in the minds of some of the farm women when they filled out the blanks of the survey are shown by comments written as footnotes or on sheets attached. These original and intimate expressions of opinion and conviction, not only as to certain specific difficulties or advantages in an

individual woman's home life, but her analysis and philosophy of the bigger issues of country living are counted among the most precious records received by the Department.

Briefly stated, here are some of the points of view expressed.

Farm women love the country and do not want to give up its freedom for city life. What they do want is normal living and working conditions in the farm home. "The country offers greater opportunity for satisfying life than the city, and country women have as great capacity as city women for the enjoyment of life, but are more handicapped with routine work which absorbs their time and strength."

Because of the shortage of help prevalent throughout the country, women consider it especially important that modern equipment and machinery so far as possible do the work which would otherwise fall to women.

The questions are asked: "Does the farmer lack business sagacity who invests in the sulky plow, used only during one season of the year, and puts off the purchase of the washing machine?" "Is it an error in judgment to justify outlays which result in better crops and buildings, and consider home investments an extravagance?"

The farm woman does not wish to put up with today in the anticipation of something better tomorrow or in her old age, but wants a chance to enjoy today as the only possession she is sure of. The woman feels that she owes it to herself and her family to "keep informed, attractive, and in harmony with life as the years advance."

Women realize that no amount of wise arrangement or labor saving appliances will make a home. It is the woman's personal presence, influence, and care that make the home. Housekeeping is a business as sordid and practical as farming and with no romance in it; homemaking is a sacred trust. "A woman wants time salvaged from housekeeping to create the right home atmosphere for her children, and to so enrich home surroundings that they may gain their ideals of beauty and their tastes for books and music, not from the shop windows, the movies, the bill boards, or the jazz band, but from the home environment."

In the minds of many women is the thought that the man at the head of the house lives under a strain of hard work and competition and that "for him to have a comfortable fireside and a family that is happy, healthy, well fed, well clothed, well sheltered, and contented is his right and his greatest boon."

The farm woman knows that there is no one who can take her place as teacher and companion of her children during their early impression-

able years, and she craves more time for their care. She feels the need of making the farm home an inviting place for the young people of the family and their friends and of promoting the recreational and educational advantages of the neighborhood in order to cope with the various forms of city allurements. She realizes that modern conditions call for an even deeper realization and closer contact between mother and child. The familiar term, "God could not be everywhere so He made mothers," has its modern scientific application, as no amount of education and care given to children in school or elsewhere outside the home can take the place of mothering in the home. "The home exists for the child, hence the child's development should have first consideration."

Farm women want to broaden their outlook and keep up with the advancement of their children "not by courses of study, but by bringing progressive ideas, methods, and facilities into the every day work and recreation of the home environment."

The farm woman feels her isolation from neighbors as well as from libraries and other means of keeping in touch with outside life. She counts her favorite farm paper or woman's magazine among her valued aids. She believes that farm women should come together more often in organized groups to learn from each other, and to gain a mastery of their problems through united effort. "The farmer," she declares, "deals much with other men; the children form associates at school; but we, because of our narrow range of duties and distance from neighbors, form the habit of staying at home and, to a greater degree than is commonly supposed, feel the need for congenial companionship."

Thus the farm woman, although considered conservative and inclined to put the question to things new and untried, expresses an openmindedness and a forward looking spirit. When she is aroused and convinced that any new step in advance is for the best interests of her home she will be found progressive, coöperative, adaptable, and ready to make changes no matter how great the personal effort or sacrifice.

The five outstanding problems which the survey would indicate call for special consideration are:

1. To shorten the working day of the average farm woman.
2. To lessen the amount of heavy manual labor she now performs.
3. To bring about higher standards of comfort and beauty for the farm home.
4. To safeguard the health of the farm family, and especially the health of the mother and growing child.

5. To develop and introduce money-yielding home industries where necessary in order to make needed home improvements.

These changes may most speedily be brought about by:

1. Introducing (a) improved home equipment, principal among which are running water and power machinery, and (b) more efficient methods of household management, including the rearrangement of the inconvenient kitchen and the installment of a modern heating system for the whole house.

2. Helping farm people to understand and apply the laws of nutrition and hygiene, through home demonstrations in (a) child care and feeding, (b) food selection for the family, (c) training in the essentials of home nursing, and (d) the installation of sanitary improvements.

3. Cultivating the idea that investment in the comfort, beauty, health, and efficiency of the farm home and community is a wise and legitimate expenditure, and perhaps the only means of stopping the drift of young people to the city.

THE SURVEY AND THE EXTENSION SERVICE

The composite picture here presented of the activities and environment of a large group of farm women naturally raises the question as to what steps are being taken to relieve these women of some of their present handicaps. Replying to this, it may be stated that for some years the home economics pioneer has given her service to the housewife. Since the passage of the Smith-Lever Act, the home demonstration agent has become a factor in extension work with the home. The data here presented serves a dual purpose: first, it offers a reliable and much needed guide to extension workers in their service to the home; and, second, it points out to the farming people, and others interested, the great value of trained assistance to farm women along definite lines.

In endeavoring to build up a broad educational extension movement, made possible by the Smith-Lever Act, the state colleges of agriculture and the States Relations Service have, up to this time, had a much more limited background of facts on which to base plans for coöperation with rural housewives than with farmers for the reason that little attention has been given to farm home problems, although the farm woman's work has as great economic importance and calls for as high a degree of skill and as wide a range of information and judgment as does the work of the farmer whose equipment and methods of farming have been the subject of many studies made by our agricultural institutions.

With the exception of the investigations of the Country Life Commission appointed by President Roosevelt, in 1908 (Senate Document 705), and the inquiry as to Farm Home Conditions made by Secretary Houston in 1914, replies to which were compiled and interpreted (Yearbook 1914, also Reports 103, 104, 105, and 106), and two intensive studies of counties made by the States Relations Service (Canyon County, Idaho, 1916; St. Joseph County, Mich., 1916), comparatively little has been done in this field which throws light on conditions in the North and West. Hence the importance of the present survey, which, resting upon information from many communities, probably gives a fair diagnosis of farm home conditions and, when interpreted by extension workers and farming people, should point to remedies which may be applied through organized effort and local leadership.

The farm bureau. With the introduction and development of the farm bureau idea, now nation-wide in its influence, promoting as it does a self-determined program of activities among the people for the economic and educational advancement of rural life, the farmer and his wife are destined to analyze their home problems more and more and to make use of the farm bureau organization and the extension service for the solving of those problems.

The farm is subsidiary to the home as is the home to the farm. Here men, women, and children form a working unit, with common interests and aims, and the farm bureau dealing with this family unit and with community groups views home work, not as isolated and detached from the farm, but as one phase of the problems of the farmstead. Men and boys work primarily with production in the business of farming and women and girls with utilization and conservation in the business of housekeeping, but all come together in a common interest and for a common goal—homemaking. Farming and housekeeping are not ends in themselves, but necessary means to the realization of this goal.

Prosperity on the farm and efficiency in the house in their last analysis are only valuable as they make people better, wiser, and happier by creating and multiplying opportunities for richer and more satisfying rural home and community life. Hence all extension forces, the county agricultural agents, club agents, home demonstration agents, and specialists are working in their respective fields with this larger aim and purpose. This brings about constant interchange of effort and service. For example, the farm woman's interests and activities go beyond the threshold of her house, when necessary, into such work as poultry rais-

ing, bee keeping, and marketing of home products. In this she frequently has the help not only of the men folks at home but of the county agricultural agent, the club agent, and men specialists from the college. She may also call upon these for advice and assistance in looking after the water supply and other phases of home improvement. Women extension workers also frequently go out of their special field of home economics work to give advice and assistance, thus expressing, it is believed, the true spirit of the Smith-Lever Act which drawn in broad language refers equally to the service of the farm and home and includes all phases of work that effect wholesome farm life.

The home demonstration agent. Women are everywhere welcoming the services of the home demonstration agent much as farmers welcome the agricultural county agent. This trained home economics worker, employed on federal, state, and local funds and devoting all her time to the advancement of home efficiency is studying with homemakers the needs of individual homes and communities and is thus able, by linking her technical skill with the practical knowledge and experience of the housewives, to coöperate in the accomplishment of large results by providing a channel through which the state agricultural college and the Department of Agriculture can deal directly with rural homemakers.

Increased moral and financial support of local communities during the present fiscal year (1919-20) for the three hundred agents now employed has shown the belief of the people of the North and West in home demonstration work and placed it on a promising basis which looks toward its establishment eventually in every agricultural county in the North and West.

A few instances are here given to show the methods used and results secured through the partnership of the housewife, the home demonstration agent, and the home economics specialist in solving some of the live problems pointed out in this survey.

Home management. A large family lived in a small house on a prosperous farm; little thought had been given to the expenditure of any part of the farm income for home convenience. One day the mother in this home mentioned to the home demonstration agent that it was difficult to keep the kitchen in order when all members of the family used it as a place to "wash up." The agent suggested the possibility of a wash room with water piped into it. The farmer and his wife became interested. A carpenter was called in to make plans and before he had finished his work a screened porch was added. The wash room later devel-

oped into a bathroom complete with modern fixtures. A few more timely remarks brought forth a new water front on the range and hot water tank and sink in the kitchen. About this time there was an item in the farm bureau column of the local paper regarding convenient kitchen arrangement. Following its suggestions this homemaker put blocks under her kitchen table to save bending when at work and moved the cupboard nearer the stove to lessen steps. Later a power washing machine was bought and a wash house built. The milk separator was moved out of the kitchen into the wash house. This homemaker was so delighted with her transformed work shop that she called in the neighbors to see it and as a result five more women rearranged their kitchens, two put water in the house, and three are now planning to purchase power washers.

The annual report of the home demonstration agents for 1919 indicates that a decided advance was made last year in the business side of house-keeping. One hundred sixty-six counties where home demonstration agents were employed carried on some sort of county-wide campaign for increased home efficiency.

One thousand seventy-seven farm families were assisted in rearranging farm house or kitchen as an important first step in efficient housekeeping, the largest number reporting from Iowa.

Home economics specialists. Closely associated with the home demonstration agent and preceding her as a pioneer is the home economics extension worker who goes out from the college to conduct extension schools, to train local leaders, and in various other ways to bring to housewives the best methods and processes resulting from laboratory experimentation. Typifying this is the work of the Massachusetts clothing efficiency specialist who personally trained 268 local leaders in courses of clothing efficiency. These women passed on these courses to over 4000 of their neighbors and acquaintances. As a result 4320 garments were made and 9802 remodeled, with an estimated saving of \$56,998. This work done in coöperation with home demonstration agents is looked upon, in Massachusetts, as the beginning of a state-wide drive for clothing efficiency which will meet the needs of every rural woman of moderate income who wishes to make part or all of her own simpler garments or those of her family.

Replies to the survey indicate that 92 per cent of rural homemakers do a large part of their own sewing.

Anything that shortens the time the farm woman spends on the family sewing or helps her to make or select garments that give better satisfaction for a given expenditure of time and money, and especially anything that helps her reduce clothing expenditures in this era of inflated prices meets a real need.

The annual report for 1919 shows that clothing specialists and home demonstration agents aided through direct teaching and training of volunteer leaders in the making or remodeling of 30,000 garments at an estimated saving of \$218,000. The following lines were stressed: renovating and remodeling, adaptation of commercial patterns, the making of dress forms, free hand cutting and drafting, and selection of textiles.

School lunch. The hot school lunch project in which extension workers have had a prominent part has been most successful. The survey indicates that the average country school is about one and one-half miles from the home, which makes it impossible for the country child to share in the hot midday dinner prepared for the family.

An examination of the school dinner pail often reveals that too frequently unappetizing or indigestible foods are the underlying causes for lack of appetite and restlessness of pupils. Well selected food, attractively packed, supplemented by one simple hot dish prepared by the pupils at school, has resulted in improved health and better school records. It has also proved the opening wedge for the study of food selection in the home not only for the child but for the whole family, and has increased the use of milk, cereals, and vegetables in the diet.

In Pirtleville, Arizona, where malnutrition was prevalent among school children, the home demonstration agent secured the coöperation of the school principal, the school nurse, and the project leader of the Farm Bureau, in putting on a child feeding demonstration. At the end of the six weeks demonstration the children showed marked gains in weight and noticeable improvement in school work and deportment. The county was awakened to the benefits of proper child feeding, and the installation of school lunches in a number of outlying schools resulted.

The annual report for 1919 shows that practically all of the 33 northern and western states carried on some sort of hot school lunch activities and that more than 3000 schools introduced school lunches through the influence of the home demonstration agent.

Home health. One of the outstanding extension projects during the past year has been that of home health. This has included demonstration in first aid, the elements of home nursing, preparation of food for

sick and convalescents, and preventive hygiene. It is gratifying to know that 202 counties have adopted a home health project and that 28,000 families have coöperated with home demonstration agents in an endeavor to improve their own and their neighbors' health.

In Idaho where vigorous health work has been carried on, several county nurses are employed on state funds, this work being under the general direction of the state home demonstration leader.

Activities outside the house. The service of the home demonstration agent is not confined to the house, but follows the woman into the garden, the poultry yard, and dairy to assist her in outside tasks when these contribute to home comfort.

Judgment as to relative values usually guides the homemaker in determining the amount of outdoor work it is profitable for her to do either as a money making scheme or as a means of producing food for the family table. Often when the woman lacks even small resources to bring needed comfort and beauty to the home, such industries as poultry raising and gardening provide the needed increase in income from which all the family may derive benefit.

It is poor business from every standpoint, however, if work out of doors means overstrained nerves and muscles resulting from an attempt to take on these duties without releasing any household tasks or if it means neglect of housework or sacrificing attention to children, thus lowering instead of increasing the standard of living.

Statistics show that young women are leaving the rural districts for the cities in larger numbers than young men. Where this is true the influence of the home demonstration agent has been most telling in helping young women to feel their economic importance in agricultural and home pursuits and in discovering ways of making incomes on the land equal to those that could be earned in shop or factory.

Work with poultry. Poultry work has been promoted in several states through demonstrations along lines of poultry selection, breeding, raising, feeding, housing, culling, canning, preservation of eggs, and coöperative selling of poultry products. Many flocks have been improved when farm women have found through culling demonstrations that 40 per cent of the average flock is non-productive.

Connecticut, Delaware, Idaho, Illinois, Missouri, and Vermont carried on intensive poultry culling campaigns in which the home demonstration agents played a prominent part. Schools of instruction were held so that those trained might not only eliminate their own non-producing birds but teach their neighbors through community demonstrations.

In Missouri, 73,765 birds were eliminated from 1593 flocks culled with an estimated saving of \$50,161. In the coöperative buying and selling of eggs 8 cents per dozen more was received than on the local markets.

Milk products. Making and using dairy products in the home is being stimulated by the work of home demonstration agents who are coöperating in milk campaigns for increased use of milk and milk-products in the home and the home manufacture of such milk products as can be most economically handled there. Reports of these agents for 15 states for the year 1919 show that 367,000 pounds of cheese were made by the housewives to whom home demonstration agents and dairy specialists had given assistance in the best methods of making cottage, American and Cheddar cheese both for home consumption and for sale.

It is claimed by those who have made investigations that 25 per cent of country children do not drink milk. A definite drive is now being carried on to persuade country children to drink more milk, and, to this end, feeding demonstrations are being conducted by home demonstration agents in coöperation with parents and teachers.

One state reports the increase of home consumption to be 438,000 quarts daily; another state, where home demonstration work was carried on in only six counties, reports 279,000 quarts daily as a result of this work. In Indiana one home demonstration agent in coöperation with the school nurses and doctors proved the value of the increase of milk in the diet by putting on a child feeding demonstration with a group of undernourished children. At the end of six weeks an average gain of $7\frac{1}{2}$ pounds had been made and the school board voted funds to carry on the enterprise.

Community enterprises. The socializing influence of the many war emergency organizations is now being capitalized by home demonstration agents who are assisting communities to tie up these temporary enterprises with permanent activities in connection with efficient homemaking.

Two effective means of reducing home drudgery are the introduction of such modern labor saving equipment in the home as will accomplish necessary work in the most efficient way; and the removal from the home of such activities as can be carried on as cheaply and as successfully through community coöperation as by traditional home methods; for example, since survey replies indicate that 96 per cent of the women do their washing and ironing, it would seem that such an activity might well be removed from the home, releasing each week many hours of the woman's time, and saving her from one of the heaviest tasks of the

household. Experiments in a number of communities indicate that a coöperative laundry, especially when run in connection with a creamery, is not only a convenience but a paying investment.

Recreation. Community working and trading centers mean much to rural women, not only from the standpoint of economy, time, money, and effort, but as a means of persuading the stay-at-home to walk through her gate and down the road to join her neighbors in some task which is made lighter through coöperation and from which she returns refreshed and encouraged with new ideas and plans, not only for her own housekeeping, but for the larger housekeeping of her neighborhood. No amount of socialized work, however, takes the place of real recreation, as it looks too earnestly toward a finished result. Carefree recreation for the delight of the moment eases nervous tension, promotes good fellowship, and is as necessary for the mental and physical poise of men and women as it is for boys and girls. Home demonstration agents are, where no other agency is meeting this need, coöperating with farm families in home and community recreation which includes games, chorus singing, dramatization, and pageants.

The extension department of Montana State College, realizing the importance of this, employs a recreation specialist whose work is stimulating a fine social community spirit in many localities in that state where homes are so far apart. Montana is thus putting into practice a conviction that is growing in the minds of extension workers everywhere that, while it is their first business to promote efficiency, this should be looked upon as a means of stimulating a richer and more satisfying rural life by freeing the homemaker's time and energy so that she may give attention to the attractiveness and comfort of her home, the training and companionship of her children, the enjoyment of books and neighbors, and the building up of recreational, social, and educational life of her community. Thus will increase the percentage of active, thinking women of service to society and reduce the percentage of passive slaves of routine whose tasks cease only to begin again with a new day.

It is believed that the survey just completed by farm women themselves in coöperation with home demonstration agents is but the first of a series of intensive studies which will from time to time be made not only to show the needs but to mark the advancement that is sure to come as the government, colleges, and farming people work together on a common program for better agriculture and a richer rural life.

GAS UTILIZATION WORK OF THE DEPARTMENT OF THE INTERIOR¹

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Within the Union there are 23 states using natural gas as a fuel to a greater or lesser degree: West Virginia, Ohio, Pennsylvania, Kentucky, New York, Indiana, Arkansas, Louisiana, Texas, Oklahoma, and California producing 98 per cent of the supply. Till within a few years there has been no thought of the possible failure of natural gas and there has been extreme waste that has brought about an acute shortage. Since there is no fuel which altogether equals nature made gas in heating value, cleanliness, convenience, and cost, this directly affects the comfort and well-being of over 2,400,000 domestic consumers, not to mention the industrial user.

A National Gas Congress, called by former Secretary Lane, and attended by gas officials, geologists, engineers, and others vitally affected, such as state and city officials and home economics workers, resulted in the appointment of a committee of ten composed of one mayor, one geologist, two public utility commissioners, an engineer, four gas officials, and a representative of the American Home Economics Association, with the Director of the Bureau of Mines acting as chairman. One of the first acts of the Bureau of Mines was the appointment of a home economics worker, specializing in the domestic use of natural gas, to go into the field.

The committee was divided into sub-committees to investigate the losses and problems of production, transmission, and utilization. The recommendations as the result of this work have been adopted by the public utilities commissions of the several natural gas using states. Through these commissions, an effort will be made to eliminate the great wastes, especially the great home wastes of natural gas in the very low set burner range with solid top and the coal stove with gas burner attachment, and to create a demand for all efficient appliances.

Since the Bureau of Mines has but one worker in the field it asks the great group of women working on home problems to carry the information in regard to gas conservation to the many homes that need it.

¹ Brief summary of a paper presented at the Thirteenth Annual Meeting of the American Home Economics Association, Colorado Springs, June, 1920.

THE RELATION OF THE EXTENSION SPECIALIST TO FIELD WORK¹

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Any specialist in projecting her work throughout the state should have in mind a definite program of work that can be presented in a clear and tangible manner to the county home adviser, to the people who direct the enterprise, and to the individuals in their homes.

The problem of feeding the family needs, today, even more attention than ever before. Feeding the family must be carried on correctly, that is, according to scientific and economic principles, and in this day of efficiency it should be done in the minimum time with the least expenditure of energy and money. While feeding the family is only one of the series of occupations in the home, it is one of the most important, since the health of the family, the happiness of the family, and the efficiency of the family are largely dependent upon the amount and kind of food served.

The launching of the meal planning project is not as difficult as it has seemed to some, and the carrying on of the special work or the following up and reporting of the project is possible when a suggestive scheme is printed and ready for distribution. Two things are necessary besides a definite plan to make a project workable in any county: an instruction blank, such as the Food Calendar;² a follow-up blank such as a monthly food calendar summary sheet.

The Food Calendar, prepared at the University of Illinois last fall, serves throughout the state as an instructional blank. The calendar was compiled to furnish a means or a method for "getting over" subject matter—fundamental, scientific, and economic principles which have been in print for some time and thoroughly distributed but not always read. The food calendar is made up of two distinctive features. The right-hand portion of each page is devoted exclusively to subject matter, and, because this portion of the instructional blank is strictly educational, each of the thirty-one pages is quite different though each page is not a unit unto itself.

¹ Presented at the Thirteenth Annual Meeting of the American Home Economics Association, Colorado Springs, June, 1920.

² See page 461 for reproduction of one page of the Food Calendar.

The following grouping was planned: 4 pages to food programs, choice, selection, and meal building; 4 pages to weights and measures, time tables for cooking, and temperatures; 3 pages to proportions; 4 pages to the school lunch; 5 pages to milk and its products; 4 pages to variety in the preparation of four simple foods; 5 pages to food requirements, adequate meals for adult and child, corrective menus, and feeding the sick; 1 page to the arithmetic of menu making; 1 page to "serving is a part of the meal."

Since feeding the family is at least as important as other occupations and the time required to select, prepare, and serve the meals for the average family is greater than that necessary for any other phase of home making, the left-hand portion of the calendar is constructed to make record keeping and reporting as easy as possible for the busy housekeeper and to require a minimum amount of writing. The standard is constantly before her in a graphic form so that she can see whether or not she meets the standard or falls short. If the latter, she can make any necessary changes and more nearly approach the standard from day to day. The food chart will help her whether she ever reports what she does or not.

The plan of procedure is very simple. "To use the food calendar, place a check opposite the food served for breakfast in the first column, for dinner in the second column, for supper or lunch in the third column." A child can use the calendar as readily as an adult. To the child particularly it is a game and because of the story it tells it becomes fascinating to the checker. The revelation is this: "When you use the food calendar you will be able to see at a glance whether you are omitting one of the five food groups from your diet, whether you are neglecting one, or whether you are over-emphasizing one." The amount of food you need from each group can be easily understood and calculated by studying page 30, "The Arithmetic of Menu Making." How to use the food chart may be reduced to a formula with a proof. There are two steps to this formula and each step is incomplete without the other.

The first step of the formula: "All five groups should be represented in the diet every day." The ration for the day instead of the single meal is considered as a unit. To the busy housewife this has a decided advantage over the balanced meal.

The second step of the formula: "In selecting the foods for the day's ration, select them from the different groups and in the following proportions: 1 from group I; 1 from group II; 1 from group III, or 2 from

FOOD CALENDAR

DAILY RECORD

Month.....Day 4

All FIVE GROUPS should be represented in the diet EVERY DAY

		B	D	L or S	
GROUP I Foods characterized by mineral substances and organic acids	Spinach or lettuce.....				BUILDING A MEAL Five things to remember: (1) That each food group includes expensive foods and cheap foods. Expensive foods are usually chosen for their particular flavor or texture. Be reasonable and sane in your selection. Do you wish to pay for flavor, for texture, or for food value?
	Peas or string beans.....				
	Tomatoes.....				
	Turnips or carrots.....				
	Cabbage or onions.....				
	Other vegetables.....				
	Apples or pears.....				
	Oranges or grapefruit.....				
	Other fruit.....				
GROUP II Foods characterized by protein	Berries.....				(2) That you may substitute one food for another in the same group; that is, fruits for vegetables, fish for eggs, cream for butter.
	Fruit gelatin.....				
	Lean meats.....				
	Poultry.....				
	Fish.....				
	Oysters.....				
	Milk.....				
	Cheese.....				
	Eggs.....				
GROUP III Foods characterized by starch	Dried legumes.....				(3) That if you wish to buy cheap fuel foods, you should select them from the cereal group: corn meal, grits, hominy, and oat-meal. The other food groups furnish fuel also, but the starch, sugar, and fat groups are those on which we depend most for fuel in our diet.
	Nuts.....				
	Cocoa (beverage).....				
	Custard.....				
	Ice cream.....				
	Flour or meal mixtures.....				
	Bread.....				
GROUP IV Foods characterized by sugar	Crackers.....				(4) That a well-rounded diet includes the building foods (Group II). Meat, fish, eggs, etc., are more valuable as tissue builders than as fuel foods, although they are capable also of producing both heat and energy.
	Macaroni.....				
	Rice.....				
	Tapioca.....				
	Cereal breakfast foods.....				
	Other cereal food.....				
	Potatoes.....				
GROUP V Foods characterized by fats	Sirup.....				(5) That when building meals, all three meals should be carefully planned each day on the basis of a two-day or a week meal program. Emergency changes may be necessary—in which case consult the calendar for substitutes and suggestions.
	Honey.....				
	Preserves.....				
	Jellies.....				
	Dried fruits.....				
	Candy.....				
BEVERAGES	Sugar.....				
	Frozen ices.....				
	Butter.....				
	Cream.....				
	Lard.....				
	Salt pork.....				
	Bacon.....				
	Chocolate.....				
	Vegetable oils.....				
	Coffee.....				
	Tea.....				

Breakfast—B Dinner—D Lunch—L Supper—S

Name..... Address.....

group III; 1 from group IV, or none from group IV; no more from group V than from group I, *except* when butter and cream are used in small amounts two or three times during the day."

To prove the formula, count the number of checks found in each of the five groups for the day. Take the number of checks found in group II as an indicator and the checks in the other four groups should tally with the second step in the formula. For example, when group II has 5 checks, the number "5" is taken as the indicator, and the number of checks in the other groups should approximate 5. That is: 5 from group II; 5 from group I; 5 from group III, 5 from group IV, or 10 from groups III and IV, distributing this number at choice, as 7 from III and 3 from IV; 5, 6, or 7 from group V.

The county home adviser carrying on a project in her field must furnish a means for follow-up work or some method of keeping up with the groups of individuals or the individual who has undertaken to follow the project. This may be done by distributing the instructional blanks.

The food chart furnishes the device for follow-up work. The individual checks the food chart, understands in part, diagnoses or analyzes the case in so far as she is able, and then carries the calendar to the meetings or to the office of the county home adviser, or sends it to the county office for comments, suggestions, or criticisms. This she does for her own development, and it promotes and stimulates further study and a willingness to actually do the thing in the home, thus making the project a real home demonstration.

When is the logical time to introduce an instructional blank in the program of work? When the specialist and the adviser have (a) studied it, (b) believed in it, (c) tried it out, (d) seen the possibilities in it for presenting many different phases of food work, study work, or project work, (e) made a definite plan of work or procedure lasting from two to six months, or possibly two years, (f) interpreted the blank into words which are clearly understood by the individuals in the homes, (g) made a practical, adaptable, and useful project for the individual in the home, (h) conducted preliminary work other than publicity. This type of preliminary work is carried on by the working force of the county or community.

To further the work of a program or to launch a project, preliminary work is essential. The development of a program of work depends upon a plan of work, the manner of carrying it on, and reporting. This

may be accomplished by conferences of the adviser with the specialist, with the executive committee, and with the advisory council of the county; the adviser and the specialist holding specially called conferences with committees and holding open schools in the county.

Therefore the preliminary work is most important. One county has accomplished more in four months (two months devoted exclusively to preliminary work, two months to launching the program of work carrying it out or following it up) than other counties which have spent six to nine months. The county home adviser should plan the preliminary work with the specialist, since the actual doing is based upon the instructional blank and the report blank which have been formulated by the specialist.

The follow-up work is possible in any county in Illinois, since in the office of each of the county home advisers in the state and in the state office there are lists including the names and addresses of all who have enrolled in the project or who have purchased calendars.

Follow-up work has been carried on in various counties in four different ways: through regular and special meetings; by questionnaires; by round table discussions and individual conferences in the office of the county home adviser; and by exchange of leaders from one unit to another or by one leader serving many units.

Reporting of project work by the county home adviser to the state office may be done by the committee reporting to the adviser, as a result of a questionnaire; by the adviser reporting, using the food calendar summary sheet; by the adviser in her monthly report to the state office.

The results reported from the meal planning projects include changes in diet (food habits), improved health, saving of time in preparation of food, conserving of energy, change in manner of selecting food for meals, keener interest in feeding the family correctly, reduced cost of food.

The instructional blank may be used through different types of meetings, with certain advantages and disadvantages for each:

(1) Through single unit meetings.

Advantages. This reaches a greater number of people but all are not seriously thinking or ready for hard work.

Disadvantages. It is a form of entertainment. No preparation or preliminary work is possible except through newspaper announcements, letters, and bulletins. No results are available. There is no way to follow up or promote the project and manner of reporting. This type of meeting does not develop leadership.

(2) Through county meetings held in five different places in the county.

Advantages. This may reach a large number of fairly interested people.

Disadvantages. This type is a form of entertainment since no one feels the responsibility for furthering the project. This type of work will never encourage or develop leadership among the local women. This type will never develop home demonstrations.

(3) Through county meetings held in two central places in the county.

Advantages. This type is a representative meeting in that delegates from most of the units in the county attend one or more meetings. This type encourages serious thinking and a keen interest in the affairs of the home.

(4) Through county meetings held in one central place in the county.

Advantages. Delegates and one other person attend all the meetings. All units in the county are represented. Delegates serve as a county committee and plan the work for four to six months with the county home adviser.

This type develops leadership, and the two-day conference with the county home adviser and the specialist gives the women "enough steam" to launch the project in the right way in the county. This type of meeting gives the delegates instruction in the use of the food chart or the instructional blank. This type of meeting is far reaching in that the influence which the delegates have in their own community is greater than that of the ordinary listener. This type of meeting encourages and strengthens the home demonstrations, the project moves more rapidly, and the results are more permanent.

Disadvantages. Numbers attending the meetings are small; however, those in attendance are representative and come from all sections of the county and we have quality rather than quantity.

EDITORIAL

A Letter from the Office International, De L'Enseignement Menager, Fribourg (Suisse), to the Office of Home Economics, United States Department of Agriculture, Washington, D. C.

Fribourg, June 15, 1920.

Dear Monsieur:

Last March we sent to the members of the Federation of Allied Countries, a circular, in order to obtain their opinions on the subject of the organization of a new International Congress of Home Economics Instruction.

We have received responses from all the countries of the Entente.

From France. M. le Chanoine Dupin, almoner of the higher normal course of home economics instruction at Paris, tells us that the French agree that a congress be organized among the nations allied to France or those remaining neutral during the war, and that they should meet at Strassbourg. He adds, with good reason, that questions of education are the last on which one should have to ask light from Germany, because in France one does not conceive of home economics education as a simple initiation into the things of practical life, but as a preparation of the woman for her triple rôle of wife, of mother, and of mistress of the house.

Furthermore, M. Georges Goyau and Mme. Moll-Weiss approve also the idea of a new Congress and propose first Strassbourg, second Paris, as the seat.

Mme. Delaage also desires this organization and proposes for it a practical character with the following program: Organization, Science, Work, on condition of restraining the powers of action and of leaving wide open the door to private initiative.

From Italy. They propose Milan as the seat of the Congress, because, in this country, they recognize opportunely the development of the domestic and home economics sciences. They estimate that it should take place next autumn and they propose to have taken up there:

1. How and when home economics instruction should be given to the daughters of the people and in the higher primary schools?
2. In what way it is necessary to organize the courses for the rational preparation of teachers of domestic sciences. That last question is greatly desired and of the highest importance for Italy.

From Holland. They propose Amsterdam as the seat of the Congress, because of its neutrality and of its advantageous situation. They propose to consider there the following questions:

1. How the home economics schools are conducted and how they existed during the war.

2. Have they been supported by the state or the people?

3. How have the home economics schools adapted themselves to circumstances and what services have they rendered to the governments and to the people?

4. Have the government and the authorities appreciated these services and in what manner have they shown it?

5. What reforms would have to be carried out in home economics instruction in order that it might conform in a lasting fashion to actual circumstances: (a) for the preparation of housekeepers; (b) for the preparation of assistant housekeepers; (c) for the preparation of servants; (d) for the preparation of domestic science teachers.

6. In what measure the home economics schools can aid in the relief of social conditions from the point of view of housing, of food, of infant hygiene, of the simplification of housework, of expenditure and cooperative buying, of excessive prices, of the adulteration of food?

7. Is it desirable or urgent that the governments procure assistance for home economics teachers?

From Denmark. They claim that the organization of a new Congress is still premature on account of hard times and of the difficulties of travel.

Belgium considers very opportune and even urgent the organization of a new Congress in one of the allied countries, particularly Strassbourg, and not a town of Holland, for the Dutch are not friendly with the Belgians.

In Belgium they foresee that they will have a new adjustment of the subject matter of home economics teaching and that it will be necessary to cut down because of the dearness of living, to foresee the scarcity of servants and to organize their houses in such a way as to be able to do away with servants in a large measure. Mlle. Deleu proposes, further, to have taken up there:

1. What has been done in all countries during the war for the benefit of home economics teaching?

2. Should this instruction be required in the lower and middle schools?

3. Should not courses of domestic science be organized in the universities?

4. Is it not necessary to attach a great deal of importance to the training of the teaching personnel of the schools of home economics?

5. What method ought to be adopted in order to make this teaching really useful?

6. The method to adopt—individual, in groups, cooperative?

7. Is it necessary to have a special department in each school for giving this instruction? What ought this department to be in the country schools,

in the city schools, for primary schools and the middle schools? What ought this department to be in the home economics normal schools?

8. Would it not be useful to organize home economics courses for boys?

9. A large number of parents do not appreciate this teaching; how convince them of the necessity of the teaching of home economics?

10. The inspection of economic teaching; the duties of inspection.

From Alsace. They are afraid that, even in 1921, it will be impossible to organize a new International Congress: hatred is still too bitter.

In Switzerland, on the contrary, they find that they will have an opportunity from this time on to occupy themselves with preparation for a Congress. They suggest Switzerland as the seat, because this country lends itself better than any other to an international meeting. They would like to devote special attention to the schools of agricultural economics, the war having proved once more that it is necessary to stay in the country as much as possible, cultivating the earth. They propose to treat with equal importance the practical teaching of domestic economy and housekeeping to the apprentices of different professions, of private work-shops, and of factories.

To sum up, the great majority of competent people to whom our circular was sent, is unanimous in recognizing the importance of a new International Congress for 1921. It would be premature and insufficiently prepared for were it to be held in 1920. France and Belgium wish to have Strassbourg for the seat and, as a matter of fact, is not this city chosen as having a great many associations not only for Europe but also for America because of the proximity of the battlefields, and is it not a center which is easy to reach?

This, my dear sir, is the situation in which the question of the future International Congress of Home Economics Teaching stands. We are still awaiting propositions from Canada and from the United States. We hope that, in spite of the distance which separates us, they will not be slow and that the meeting at Colorado Springs, to which we wish the greatest success, will declare itself in favor of an international congress in 1921, in one of the countries of the League of Nations.

Finally, we wish to add that the war brought to an end the contributions of governments and of large societies, as well as the assessments of the members of the Federation. The Swiss Association alone has continued to remit to us our usual contribution, which has enabled our office to exist up to this time.

Can you not obtain from your honorable Association a contribution and from your members the assessment of five francs a year?

Be pleased to accept, my dear sir, the expression of our distinguished and very devoted sentiments.

(Signed) L. N. GENOUX,
Director.

In response to this letter the Council of the American Home Economics Association at the meeting in Colorado Springs voted to send the International Office a contribution of \$25.00 and to urge the members of our Association to join as individuals by paying \$1.00 a year.

For more reasons than one it is desirable for us to unite whole heartedly in this international movement. We need to know more about what other people are doing, both because of the service we can render and the help we shall ourselves receive. There is no better way to promote the international understanding, that is our surest protection against international differences, than to work together for a common cause.

The Science Section arranged programs for three sessions at the annual meeting at Colorado Springs. At the meeting held on Saturday evening, Dr. Helen B. Thompson, acting as chairman of the section, presided. Olga Elifritz, of the Bureau of Mines, in her paper on Conservation of Gas,¹ reported the work being done by the Bureau to aid in better utilization of the natural gas supply and called attention to the fact that literature on this subject may be obtained from the Bureau of Mines. The following paper, on Comparative Cost of Electricity and Gas, by Martha E. Dresslar, of the University of Washington, dealt particularly with the relative efficiency of various parts of the electric stove, and was illustrated by charts.

Walter G. Sacket, of Colorado State Agricultural College, gave a report of experimental work done on Vinegar Fermentations. Solutions were given for many of the problems concerning home made vinegars. Alice Biester, of the University of Minnesota, reported a series of experiments dealing with the Effect of Manipulation and Storage upon the Keeping Qualities of Canned Vegetables.

On Monday morning the main subject of the general session was nutrition. Miss Bevier presided and Dr. Agnes Fay Morgan of the University of California gave a comprehensive survey of the literature dealing with European Experience on Low Diets. Dr. Helen B. Thompson of Kansas State Agricultural College reported extensive experimental data on the Effect of Alternate Periods of Suppression of Growth and Refeeding of Albino Mice. Dr. C. F. Langworthy led the discussion on nutritional problems which followed this meeting.

¹See page 458.

On Monday evening Dr. Morgan presided over the section meeting. Dr. Langworthy reported a series of experiments on The Digestibility of Raw Starch by Human Subjects. The results of these experiments are of interest to every teacher of foods, and are published in the current series of the *Journal of Biological Chemistry*. Dr. Langworthy also made a brief survey of the work done on Expenditure of Energy in Housework the results of which have been published in the June number of the *American Journal of Physiology*.

A paper on The Preparation of Inulin from French Artichokes was presented by Anna W. Williams, of the University of California.

Dr. Minna C. Denton, of the Office of Home Economics, gave experimental results on the Economical Management of the Gas Range, and also on Grainy Fats versus Creamy Fats in Cake and Pastry.

Alice Biester reported results of experiments on The Sweetening Powers of Various Sugars.

At the close of the meeting the following nominations were made and accepted: Chairman of the Section, Dr. Minna C. Denton; Secretary, Margaret Sawyer. A motion was made and carried that a Research Clearing House Committee be appointed, and the chair was empowered to appoint such a committee. A motion was made and carried to refer the proposed change of the section name to the Council.

Submitted by

ANNA W. WILLIAMS.

THE OPEN FORM

Some Observations on Food and Other Conditions in Labrador.—Dr. Vivian B. Appleton, representing the Bureau of Social Education of the National Board of the Y. W. C. A., has been for several months in Forteau, the Association having asked Dr. and Mrs. Grenfell to designate how she could render the greatest service to their mission field for the period during which the Y. W. C. A. was able to place her in Labrador. The need seemed particularly great at Forteau, since the resident nurse, after several years of continuous service, had returned to England for six months vacation.

Dr. Appleton had with her an assistant, Marjorie Jackson, a trained Social Worker, formerly district supervisor in Red Cross Home Service in Chicago who was also furnished by the Y. W. C. A., and could supplement the work in health education by giving practical instruction to women

and girls in the homes they have visited along the coast. They have traveled by dog sled and have accomplished much important and interesting work in the nine months which they have spent in Forteau. Special attention is being given to foods in relation to health and also to the better use of the local food supply.

The following excerpts from a letter recently received from Dr. Appleton are published through the courtesy of the Bureau of Social Education of the National Board of the Y. W. C. A.

The letter and bulletins came all together, by the winter mail via Quebec by dog team, and made an inspiring mail indeed when I returned from Battle Harbor the end of March—the first mail since early December. All this new interest gave just the inspiration we needed for our spring program and we got up a "Nutrition Conference" the end of April, inviting delegates from all along the coast.

Navigation closed December eighth. There was a considerable supply of food on the coast but vegetables grew scarcer as spring approached. The shiftless went on a diet of bread and tea sometime in February, the thrifty had vegetables perhaps until sometime in April. Nervous break-downs increased after the end of March. Scurvy and stomatitis came late in April but there are few cases. Night blindness has been common since April and lately I have seen a whole epidemic of beriberi across the Straits. In relation to all these, I have tried to collect as much data as possible on the relation to diet. Some of it is suggestive and much very confusing. As soon as I have time, I shall hope to get it in more tangible form.

Cod livers are considered a delicacy during the summer. The people save very little oil for themselves for the winter.

Seal meat is eaten for a few weeks at this season of the year and I am encouraging the use of seal livers also.

I got an Alexander plant¹ for you yesterday. We have not eaten it yet as it is scarce but have eaten the "dock" as greens.

¹This and other matters pertaining to foods and food supplies had been discussed with Dr. Appleton before she left for her work. The specimen of Alexander, which she mentions, arrived in good condition. This plant has had some use in Labrador as a pot herb. The use of the young shoots for this purpose is mentioned in L. C. R. Cameron's "Wild Foods of Great Britain," Published by George Routledge and Sons, Ltd., London (1917). P. 74.

NEWS FROM THE FIELD

HOME ECONOMICS SECTION, ASSOCIATION LAND-GRANT COLLEGES¹

SPRINGFIELD, MASS., OCTOBER 20 AND 21

WEDNESDAY, 9 A.M.

Organization Among Farm Women—Methods used to Develop Leadership:

Chairman: Abby Marlatt, University of Wisconsin

Policies in the South, Ola Powell, States Relations Service, South

Rural School Supervisors, Women's Clubs, and County Seat Short Courses

Mrs. Nellie Kedzie Jones, University of Wisconsin

Women's Home Bureaus, Juliet Lita Bain, State Leader Extension, Illinois

Farm Bureaus, Neal Knowles, State Leader, Iowa

Discussion

State Policies in Measuring Home Demonstration Work in Financial Terms

Agnes Ellen Harris, States Relations Service, North and West

Relation of Boys' and Girls' Club Work to Smith Hughes Work

Gertrude Warren, States Relations Service, Washington, D. C.

Anna Richardson, Federal Board for Vocational Education

Discussion, Nancy McNeal, Boys' and Girls' Club Work, Cornell University

WEDNESDAY, 1:30 P.M.

Coöperation Between Home Economics Extension Program and Other Projects:

Chairman: Bess Rowe, State Leader of Extension, Montana

Coöperation with Public Health Nurse, Margaret Sawyer, American Red Cross

Coöperation with Public or Private Schools, Treva Kauffman

Coöperation with Commercial Projects, Robert Allen, Research Dept., Ward Baking Co.

The Research Worker:

Courses Pre-Requisite, Dr. Helen Thompson, Agr. College, Manhattan, Kansas

Need for Research in Home Economics, Dr. Alice Blood, Simmons College

Legislation, Edna White, Merrill-Palmer School of Homemaking

THURSDAY, 9 A.M.

Policies in Instructional Courses—Training for Special Fields:

Home Demonstration Agents—Round Table, Marie Sayles, Chairman

Scope of Subject in College Courses, Martha Van Rensselaer, Cornell University

Supervised Field Practice, Discussion by State Leaders

Round Table, Dean Sarah Louise Arnold, Simmons College, Chairman

Vocational Homemaking:

Scope of Subject in Training Courses, Anna Richardson

Practical Homemaking Experience: how supervised—how tested

Discussion by State Leaders

Child Welfare Work, Mrs. Ira Couch Wood, Elizabeth McCormick Fund, Chicago

Institutional Economics:

Special Majors (subject matter), Mildred Weigley, University of Minnesota

Supervised Post-Graduate Experience, Octavia Hall, Peter Bent Brigham Hospital

¹There will be a meeting of the Council of the A. H. E. A. at 7:30 Wednesday evening.

ANNUAL MEETING OF THE AMERICAN DIETETIC ASSOCIATION

Hotel McAlpin, New York, October 25-28, 1920

MONDAY

Research in Dietetics, Hilda Croll, Woman's Medical College, Philadelphia

Morning Session: Meeting of executive committee

Afternoon Session: Meeting of section on Administrative Work

Chairman: Mabel C. Little, Hospital Dietitian, Norwalk, Ohio

General Subject: To What Extent can Mechanical Equipment Replace Employees?

College Dormitory, Mrs. Elizabeth Grider, Cornell University

College Dining Room, Cora Colburn, University of Chicago

General Subject: Menu Making—its economic aspect

Dormitory, Elsie Leonard, University of Wisconsin

Hospital, Marguerite Deaver, Mt. Sinai Hospital, Cleveland

Cafeteria, Emma Baker, Whittier Hall, Teachers College

Miss Smith, War Risk Bureau Cafeteria, Washington, D. C.

Economical Buying for the Institution

Evening Session:

Address of Welcome by the President, Lulu Graves, Cornell University

Address, Dr. Alonzo E. Taylor, University of Pennsylvania

TUESDAY

Morning Session:

Marketing, Susannah Usher, Boston

Application of Business Principles to the Organization of Institutions

Training for Positions in Cafeterias, Roland White, The Colonnade Co., Cleveland

Afternoon Session: Meeting of Section on Social Service

Chairman: Blanche M. Joseph, Field Dietitian, Michael Reese Hospital, Chicago

The Supervising Dietitian in State Institutions, Theresa A. Clough, Springfield, Ill.

Social Service in Dietetics, Fairfax T. Proudfit, University of Tennessee

Evening Session:

Diet and Dentition, Dr. W. J. Gies, Columbia University

The Dietitian in Public Health Work, Dr. E. A. Peterson, American Red Cross

Diet and the War, Mrs. Mary de Garmo Bryan

WEDNESDAY

Morning Session:

Address, Dr. Katherine Bement Davis, General Secretary, Bureau of Social Hygiene

Address, Emma Gunther, Teachers College

Research in Dietetics, Hilda Croll, Woman's Medical College, Philadelphia

Afternoon Session: Meeting of Section on Teaching

Chairman: Katharine Fisher, Teachers College

Dietetics for Nurses, Lenna F. Cooper, Battle Creek Sanitarium

Teaching Dietetics to Nurses, Marion Peterson, Swedish Hospital, Minneapolis

Review of Literature on Dietetics, Dr. Ruth Wheeler, Goucher College, Baltimore

Evening Session:

Address, Sarah Louise Arnold, Dean of Simmons College, Boston

Some Dietetic Problems of Infancy and Childhood, Dr. Roger Dennett, Assistant Professor in the Diseases of Children, Post Graduate Hospital, New York

THURSDAY

Morning Session: (At Teachers College)

Economic Aspects of Buying Meats, John H. Kelley, Arthur Dorr Markets, Boston

THE Journal of Home Economics

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No. 11

VOCATIONAL EDUCATION IN HOME ECONOMICS—PART- TIME SCHOOLS AND CLASSES¹

ADELAIDE STEELE BAYLOR

Federal Agent for Home Economics, Washington, D. C.

Vocational education in home economics may best be tentatively defined, at this stage in its development, from the following viewpoints:

1. The interpretation of the law which gave the term general use.
2. The purpose of the work as expressed in the term "vocational."
3. Its method of instruction.
4. The group of people for whom it is intended.

The law limits vocational home economics, in terms of time, age of pupils, administration, grade of work, and use of funds. In the all-day school one-half of the time must be given to vocational subjects; in the part-time schools instruction must continue for 144 hours. All pupils must have reached their fourteenth birthday or have the maturity of pupils who are that age. The schools and classes must be under public control. The work must be of less than college grade, and all federal funds must be matched by state or local funds.

From the standpoint of purpose the word "vocational" really defines itself as training for the vocation of homemaking. General education, culture, information, skill, are more remote ends; the definite purpose as declared by the content of the term itself is specifically that of training for a vocation, and that vocation the one of homemaking.

In its method, vocational home economics works from without into the school room by seeking to discover the information and various skills

¹ Presented at the Thirteenth Annual Meeting of the American Home Economics Association, Colorado Springs, June, 1920.

necessary to successful homemaking, through an analysis of the "homemaker's job," made from the homemaker's viewpoint, and her actual duties, rather than based on a theory evolved within four walls, remote from the actual vocation itself.

The analysis of the job is one of the fundamental steps in setting up a program for vocational education, and was first started in trade and industry. Steps have since been taken to adapt this scheme to agriculture, and still more recently, a beginning in its adaptation to the vocation of homemaking, through the work of Zella E. Bigelow, then Special Assistant in Home Economics, Federal Board for Vocational Education.

The aim of job analysis is to find and to list *all* of the content of a given activity that functions. In other words, it is a classified determination of the job content; it determines what is to be "put over" to the learner; it answers the question, "What do we need to know to do the job effectively;" and is expressed in a modification of Richard's formula, $E = M + (T \& I)$, in which E represents equipment, skill, and knowledge required for efficient service in the trade to be taught, M represents manipulative skill required either with tools or in the control of machines, T represents knowledge of the trade technical content of the particular occupation in question, and I represents knowledge of the general trade content which can be shown to function directly in industrial efficiency.

The analysis of the job serves: (1) as a checking list for the teacher, preventing the omission of important things; (2) as a checking list for students; (3) to show what functions; and (4) to show what should be taught and what should be told, or to distinguish between instruction and information. It also aids in discovering what should be taught and what can best be learned "on the job."

In its method, vocational home economics further endeavors to tie up the instruction in the school with that of the home by emphasizing the value of the home project, and seeking the active coöperation of the mothers, that the homes may be used as laboratories in supplementing the work of the school.

By the home project method the learner is brought into contact with the vocation, a very essential condition in any vocational work. It would be a strange education that trained a plumber and gave him no contact with his job, under normal conditions, or a carpenter who worked wholly with models and artificial devices and never on a real construction itself.

Through the home project a supervised, directed piece of work is done under normal home conditions. Thus contact with the vocation is secured. It calls into play skill and information acquired in the school, and demands new skills and information, in the utilization of which the student must exercise both judgment and initiative.

A plan for the supervision of home projects, and the establishment of tests to evaluate results of such work are still to be developed. This lack is an obstacle, at the present time, to the success of this method.

From the standpoint of groups to be reached, vocational education in home economics steps out of the common school practice of receiving in a grade only such pupils as have covered all the work in the preceding grades, and opens its doors to all girls and women, no matter what the age, condition, and previous education, who can profit by this type of instruction.

While opportunity is offered for electives, vocational education emphasizes, in addition to home economics subjects, the teaching of civics, English, and applied science and art, from the study of which great benefit may be derived, without acquaintance with a large number of prerequisites.

In order to carry out the vocational scheme for education in home economics, the organization and administration of certain types of schools and classes are necessary, and these are enumerated here in the order, as I conceive it, of their importance for vocational education in home economics:

1. The part-time school designed for girls 14 years of age and above, who can not attend the full school time either because they are employed in a wage-earning pursuit or are needed at home.
2. Evening classes for young homemakers and prospective homemakers.
3. All-day classes, which continue the full school day during the school year.
4. Evening schools in urban communities for mature homemakers.
5. Evening schools in rural communities for mature homemakers.

The discussion of types in this paper will be limited to the part-time classes and schools, the importance of which in a program of vocational education was so well recognized in the enactment of the Federal Law for Vocational Education that provision was made for at least one-third of the Trade and Industry fund to be spent on this type of school. This stimulus was needed, since part-time classes are often most difficult

to initiate, in that they require, for many groups, the coöperation of employers who are unwilling for employees to be pursuing on employment time any form of education that does not seem to contribute directly to wage-earning power.

Compulsory education legislation, then, is almost a necessity for establishing successful part-time work, and the spread of such state legislation in the past two years, since the enactment of the Federal Law for Vocational Education, has been almost phenomenal. In 1917 only two states in the Union had compulsory part-time laws; at the present time 19 states have compulsory part-time laws, ten of these being enacted in 1919 and 7 in 1920. Six of these 19 are Pacific Coast States, four West Central States, five East Central States, and four Eastern States. Every section, then, with the exception of the South, is represented in the group of states with compulsory part-time laws, and the delay there no doubt is due to the fact that general compulsory education laws in the Southern States are just becoming effective and such laws logically precede those for part-time education.

In the year 1918-19, 27 part-time schools in home economics, enrolling 4278 pupils and employing 74 teachers, were reimbursed from federal funds, while in 1919-20, 325 part-time schools in home economics, enrolling 10,913 pupils and employing 313 teachers, were reimbursed from federal funds. This remarkable increase in the number of schools in so short a space of time is no doubt due in large measure to the enactment of the compulsory part-time laws, thus overcoming the difficulty of organizing this type of school without such laws.

There are three types of part-time schools in which home economics may be taught, each one of which must continue for at least 144 hours during the school year, usually distributed on a basis of four hours a week for 36 weeks.

a. General continuation classes or schools, in which less than 50 per cent of the time is given to home economics subjects, and the remainder to such general subjects as will promote the civic and vocational intelligence of the pupils. These schools are classified under Trade and Industry, and reimbursement is made from that fund. Such classes are designed especially for girls from 14 to 16 or 17 years of age.

b. Part-time home economics classes in which 50 per cent, or more, but not all of the time is given to home economics subjects, and the remainder devoted to general education subjects. These classes will reach girls 14 to 18 years of age.

c. Part-time home economics classes in which all the time is given to home economics subjects. The work here is arranged in a sequence of short units and may deal with any phases of homemaking. Many girls from 16 to 20 years of age may benefit especially by these classes.

The pupils found in the part-time classes have dropped out of school at various stages of their educational career, less frequently from economic pressure than from a distaste for the study and discipline to which they have been subject. They have had varied experiences in the worlds of employment and non-employment, and often look with grave suspicion on the school they are forced to attend.

The younger groups are found in the general continuation schools, where the aim is to promote the greatly needed civic and vocational intelligence of the American child. These young people present a very distinct problem with their limited education and fairly large experience in the world of affairs, therefore the program that meets their needs is a unique and special one. For this reason great care is necessary that the school does not follow too closely the lines of general education in the public schools or vocational education in the trade preparatory and trade extension classes.

Quoting from Mrs. Mary Eastwood of the William Penn High School, Philadelphia, in a paper read before the Educational Congress in Harrisburg, November 17 to 22, 1919: "These children expect much as a result of the operation of the law and should not be disappointed. They feel that in giving eight of their working hours to school instruction they will be greatly handicapped in advancement in industry unless the subjects are of real value to them. . . . Those paid for piece work object, for their pay envelope is smaller by \$1.00 to \$2.50 per week; even an additional carfare used in coming to school is mentioned as an inconvenience. Some think advancement in their work and increase of salary less possible because of eight hours' absence from work."

Such subjects as civics, English, arithmetic, vocational intelligence, commercial subjects, shop work, and home economics, when rightly presented, make a strong general continuation school program.

If the hours are eight per week, the following distribution of time to subjects is found successful:

Approximately 60 minutes to English and civics respectively; 90 minutes to physiology, hygiene and sanitation; 45 minutes to arithmetic; 45 minutes to geography; 90 minutes to vocational guidance; and 90 minutes to home economics. The time element, of course, will be varied to meet the needs of individual pupils and groups.

Reimbursement for such a program would be made from the Trade and Industries fund, as for any part-time program where home economics instruction consumes less than 50 per cent of the time.

The home economics extension type, with part of the time given to other subjects but with 50 per cent or more of the time devoted to home economics subjects, reaches a somewhat older group of girls and young women whose general education has been more extended or for whom marriage is not remote.

On an 8 hour a week basis for this group at least 4 hours would be given to home economics subjects with a suggestive equitable distribution of the remainder of the 8 hours as follows: physiology, hygiene and sanitation, 60 mins.; community civics, 60 mins.; English, 45 mins.; arithmetic or geography, 45 mins.; electives, 30 mins.

The other type of home economics extension classes is one in which the entire time is given to home economics subjects. This reaches a group of prospective brides, young homemakers, girls in the wage earning field or at home, who want to center their time and attention for a few hours a week on such subjects only as train directly for homemaking.

The content of the homemaking courses in these part-time schools should be close to the immediate needs of the individual girl.

For the younger groups and those for whom marriage is remote, the content should center upon their present food, clothing, and shelter needs; their present expenditures in these lines and how these can be modified to better meet their needs and incomes; how and where to purchase the most wholesome meals at least expense; what to prepare at home and how best to do this; how to select, purchase, wear, care for, and repair all clothing, including hats, shoes, hose, and gloves; available and suitable houses or rooms in the community, for family or individual use, sanitary and with rentals within their income.

There is probably not a single community that can not furnish girls and young women for these part-time classes, although the school records are still as a rule very incomplete on the whereabouts of girls no longer on their lists.

The survey to secure data on community needs for education of various types has up to this time been a formal expensive piece of work covering a large field and often disappointing in the returns to the community. The local participants in the survey have either failed to appreciate their responsibility on the constructive side, been unable to secure the coöperation of the community in setting up a program, or have removed to

other fields leaving the reorganization of the schools along the line of survey recommendations to a successor who is either not in sympathy with the proposed changes or who becomes so submerged with other problems in the new administration as to let the survey program drop entirely out of sight. Plans for informal preliminary surveys for small communities or sections of large communities are greatly needed. Such survey may not go further than the organization of a good school attendance department, coöperation with the school assessors to secure certain data on the enumeration blanks, a tabulation of material already compiled by different departments and organizations in the state or community.

A committee was appointed in May, at the Denver Regional Conference of the Federal Board for Vocational Education, to develop questionnaires and other necessary forms for such a survey. This committee is working in coöperation with a national committee appointed at the National Conference at Chicago to work on the community survey. Alice Loomis, State Supervisor of Home Economics, Lincoln, Nebraska, is chairman of both committees.

The location of the plant for part-time classes, that it may be easily accessible and thus save time and money, is very important. The place may be a school, factory, store, residence or other building that is adaptable to such classes, and where the necessary equipment is available.

In organizing the subject matter for instruction in the part-time schools, the short unit course is becoming more and more the accepted form. Such a course is well adapted to the instruction of the groups found in part-time classes. It completes a single problem, eliminates useless matter, is definite and yet flexible, appeals to people with limited time, centers attention on the individual rather than the group, stimulates regular attendance, gives definite instruction to a student as he needs it and instruction that can be used at once. Some of the essentials of a good short unit course are that it shall be reasonably complete within itself, related to other units in course, allow modification to meet individual needs, include only what is accepted as necessary skill and information by those in the vocation, related to popular need or demand, based on proper analysis of job, and tend to thorough work. In organizing short unit courses selection of content should be based on an analysis of the homemaker's job and the needs of the group. The selection of steps in the development of the course should be based on stages of difficulty in learning, previous training of pupils, standards set for production, and be such as lend themselves to the unity of the entire sequence.

Much depends on the proper segregation of groups in classes to secure the highest interest and best results. While group instruction will be possible and should be used, individual instruction will have a prominent place because of the varied educational acquirements of the part-time pupils and the varied experiences. Most of all must the methods be economical of the pupils' time. Mrs. Eastwood, in the paper referred to above also declares that the children (in part-time classes) are very good critics of class room methods and impatient of any waste of time.

In these classes, as in all school instruction, the teacher is the main element of success. If the teacher for part-time classes is rightly selected, special problems of preliminary surveys, organization of classes and subject matter, and methods of instruction will be largely eliminated. Emily Griffith, head of the Opportunity School in Denver, says that she has no volunteer workers in her school. Her teachers must be paid and held responsible for the work. Always encourage pupils, never discourage them, is a motto for the teachers in the Opportunity School.

The teacher in the part-time school needs to be practical, experienced, sympathetic with the aims of instruction, familiar with the vocations of the pupils, their conditions of work and of living. She must be capable of thinking and speaking in simple concrete language, and have at the same time broad social views and vision, with neither the attitude nor address of a social "uplifter."

Properly tempered enthusiasm, quick discernment of individual needs and good judgment are more important for this type of school than profound scholarship and much technical information. Sufficient scholarship and technical training of course are needed, but other qualifications are equally essential to success.

Too often is the elementary or high school teacher who has had little contact with work-a-day conditions brought into the part-time school. The teacher who has had contact with the business world and home-making experience makes the greatest appeal to pupils in such schools.

One reason for the failure of elementary and high school education to function in the lives of boys and girls is because the minute the doors of the school room close behind them, they are entirely lost sight of, as far as the school is concerned. What is commonly known as "follow up" work is becoming an accepted part of the vocational school program and, in the future, will be a more common feature of all school procedure. The organization of vocational schools and departments, calling as it does for information on pupils dropping out of the elementary and high schools, and their whereabouts, will necessitate keeping in touch with

those who leave school, while the enactment and enforcement of compulsory education laws will lead to the establishment of well regulated school attendance departments in daily touch with employer and employed.

An essential in the program of the Denver Opportunity School is that of "follow up" work. Points of contact are made with the daily routine of pupils when they first enroll, and, if employed, as most of the students in the school are, and voluntary attendants, as is generally the case, since Colorado has no compulsory part-time law, the interest of the employer is constantly held by reports to him of the progress of his employees. Again when the unemployed find employment the school gets in touch at once with the employer, and follows the career of students in their fields of work. If they do not succeed, teachers are sent to help "on the job."

In an article on the Boston Continuation School in the *Manual Training Magazine* for June, 1920, we read:

"An academic teacher has 20 hours of teaching and uses the remainder of the time in making follow-up visits to the pupils' places of employment or homes, in order that information may be obtained as to the pupils' individual needs. The teaching program covers 32 hours a week. A shop teacher now has 28 hours of shop teaching and the remaining four hours for the upkeep of the shop. This assignment is not considered satisfactory. Mr. Evans, formerly principal of the Boston Continuation School, says that 20 hours should be considered a proper teaching program for the shop teacher and that he should have time to assist in the follow-up work. As a further reason he says, 'This will enable us to use the valuable industrial acquaintance of the shop men and to place our boys to better advantage when they reach their sixteenth birthday.' " Such "follow up" work relates to the wage earning field, but the "follow up" work that discovers conditions of employment and of the home life gives a background for training in homemaking.

In the next few years in vocational education in home economics or training for homemaking, the part-time school will unquestionably occupy a large place and whether it shall accomplish the specific work intended and educate the groups that can be reached by no other type of school depends upon an appreciation of the needs of the girls from 14 years to 16, 18, or 20, and how to meet them. The kind of program carried out in the next few years, in the 19 states with compulsory education laws, will determine the value of this type of school and whether other states will inaugurate such laws and set up similar programs.

FOOD ACCESSORY FACTORS IN RELATION TO THE TEETH

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The effect of vitamine-deficient diets upon the teeth and gums has been noted by many writers. McCollum and Pitz,¹ Cohen and Mendel,² and others have observed in guinea pigs loosening of the teeth with bleeding or congested gums associated with vitamine-deficient diet. Mrs. May Mellanby³ produced irregular teeth in pups by rachitic feeding. Zilva and Wells⁴ examined histologically the teeth of guinea pigs fed on a scorbutic diet, and reported degenerate changes both in the teeth and in their pulps.

Now the most generally accepted theory of dental caries is that of Miller. Miller⁵ held that the fermentation of carbohydrates with the formation of lactic acid was the cause of tooth decay. He based his theory upon the following experiment: Teeth were placed in a fermenting mixture of bread and saliva, which he renewed from time to time that it might not become alkaline. After three months he obtained effects upon some of the teeth which he states could not be told macroscopically or microscopically from true decay. By zinc crystallization he demonstrated the presence of lactic acid. He felt that he had proved his theory. Histologically Miller studied only the carious mass. He ignored the condition of the tooth substance immediately in advance of the decay. Bacteriologically his work was limited, and he found no specific organism which he could regard as the etiological factor in caries.

We repeated and extended his experiment. We placed teeth in fermenting mixtures of dextrose, maltose, lactose, saccharose, and of dextrin, white flour, and of bread. In some of the tubes we used saliva from individuals that had extensive tooth decay, in others saliva from cases of no decay, and in still others saliva from mixed cases. After six months some of the teeth showed an etched appearance, some a decalcified effect, and in others no change was discernible. In general the effects resembled those on teeth that had been subjected to a weak

¹ McCollum, E. V., and Pitz, W., *Biol. Chem.*, 1917, XXXI, 236.

² Cohen, B., and Mendel, L. B., *Biol. Chem.*, 1918, XXXV, 427.

³ Mellanby, Mrs. May, *Dental Record*, 1920, XL, 70.

⁴ Zilva, S. S., and Wells, F. M., *Proc. Roy. Soc.*, 1919, B. 90, 505.

⁵ Miller, W. D., *Microorganisms of the Human Mouth*, S. S. White, *Dental Mfg. Co.*, p. 196.

decalcifying agent. The most pronounced thing brought out was the great difference in structure of the various teeth. Miller himself noticed this. He wonders why the teeth of pigs, which feed largely on fermentable foods, are free from decay.

If Miller's theory is sound it should be an easy matter to produce tooth decay in animals by fermentation. We have fed guinea pigs upon diets containing large amounts of the sugars and starches. These diets were continued for from six months to a year. The sugars were readily eaten, and adhered constantly to the tooth surfaces. The flora of the mouth became aciduric in character, but no effect could be detected in any of the teeth. We fed for three or four months microorganisms isolated from caries. The growth was constantly present in their mouths. No effect upon the teeth could be demonstrated. The animals all appeared to be in good condition at the end of six months, and even a year.

We have, however, obtained rather extensive effects in the teeth, in the alveolar process, and in the jaws themselves by feeding vitamin-deficient diets. (The effects are not confined to the teeth and their adjacent structures, but are to be seen to a certain extent in the skull bones and in other bones of the body.) We fed the guinea pigs a simple diet of rolled oats and fat-free milk. They received about 25 cc. of the milk daily, and all the rolled oats that they would eat, with a very small piece of carrot or a small leaf of lettuce every other day or every third day. The animals were carefully watched, and when difficulty in the use of their legs was manifest, or difficulty in eating observed, the amount of green food was increased. This was necessary in order to prevent death, which at this stage ensues rapidly. Our object was to produce a chronic condition in which the lime would be slowly removed from the bony structures. Thus our experiments extended over periods of from three months to a year. When the onset of the symptoms was so rapid that the animals were unable to eat green foods we fed them orange juice from a medicine dropper. They took this with great avidity, and its beneficial effects were quickly evident. They were soon able to eat grated carrot, and later thin slices of carrot and lettuce. On the latter diet, combined with whole milk, they soon regained weight and appeared nearly normal. They were then again placed on a diet of rolled oats and fat-free milk, the green food being reduced to the lowest possible quantity. McCollum's salt mixture or calcium lactate was usually added to the diet, although the milk should furnish a sufficient amount

of inorganic constituents. Agar-agar was also added for its effect upon the intestinal tract.

By the use of such a diet we were able to produce three types of dental disturbance. First, we produced a very marked loosening of the teeth, together with an extensive absorption of the alveolar process. If the effect was brought about slowly, and continued for about four months, it resembled the alveolar absorption of senility. If it was brought about with more rapidity and severity the appearance was more like carious bone. In some instances the gums bled, and a copious flow of pus occurred. These conditions closely simulate the various forms of pyorrhea alveolaris.

Second, the teeth, particularly in young guinea pigs, were regularly decalcified. A distinct bending of the teeth was seen. They could be bent with the fingers. A sharp instrument would penetrate them with ease. When brushing the bones with a soft brush, in the process of cleaning specimens, large portions of the teeth were often removed. The tips of the teeth seemed to soften first. Distinct cavity formation, accompanied by a brown discoloration of the affected structure, appeared in two cases. If, as Miller believed, dental caries is primarily a process of decalcification of the tooth structure, then we appear to have taken at least the first steps in the production of true caries. This was brought about not by the fermentation of sugars and starches in the mouth, but as one result of a profound metabolic disturbance induced by the feeding of a vitamine-deficient diet.

Third, many irregular arrangements of the teeth were brought about. For example, the lower incisors of one young guinea pig broke off while he was on a deficient diet. As the guinea pig is a rodent, the teeth grew out again, but because of the softened condition of the supporting structures became crossed like the letter X. About this time the pig was placed on a diet of whole milk with plenty of green stuff, and its general condition rapidly improved. When the skull was examined it was found that not only had the teeth become fixed in the crossed position, but the anterior part of the lower jaw had a wrinkled and thickened appearance, showing that there had been a period of decalcification followed by recalcification.

It should be stated here that the given diet was deficient in all three of the known vitamins. It may be found on further experimentation that the same effects can be produced by a deficiency of only one or two of the accessory food substances, but such a result would not lessen the

importance of any of the other factors in the diet for the maintenance of the general health. It is of course not possible to draw definite conclusions regarding human teeth from experiments, however conclusive, on the teeth of guinea pigs, but in the present state of our knowledge it would seem that those foods which are important for growth and the preservation of good health are also largely concerned in the formation and preservation of sound teeth. Such foods are those which are recommended by McCollum and many other writers,—whole milk, fresh vegetables, particularly of the green, leafy varieties, fresh fruits and whole grains.

It has been noted many times in dental writings that the teeth of aboriginal or primitive races are practically free from decay. Dr. Ottofy,⁶ on examining the teeth of Igorot children in the Philippine Islands, found that 68 per cent of them had perfect teeth, and that the imperfections in the teeth of the remaining 32 per cent were so slight that they would have escaped the notice of a layman. The Esquimaux are a caries free people. Wells⁷ reports that the Highlanders of Scotland are comparatively free from dental decay, but that the people living in the Lowlands have much decay. Speaking of the excellent dental condition of the Highland Scotch he says: "This is largely accounted for by their simple diet of natural foods." On the other hand he says of the extremely poor dental condition of the Lowlanders: "The great reason for this is, to my mind, the diet of more refined foods."

Every dentist is familiar with the fact that many of the Swedish girls who come to this country as domestics have excellent teeth when they arrive, but that after eating our refined and cold storage foods their teeth decay rapidly. When we consider that city milk has the lowest amount of fat allowed by law, that butter substitutes are extensively used, that our flour is deficient in water-soluble vitamins, and that we do not have an abundance of fresh and raw vegetables, we can readily see that there is considerable ground for the belief that not only for full growth and development, but for sound teeth, a full quota in our diet of vitamin-containing foods is essential.

⁶ Ottofy, L., *Dental Cosmos*, 1908, L, 676.

⁷ Wells, P. M., *Dental Record*, 1919, XXXIX, 348.

STANDARDIZED TESTS IN TEXTILES AND CLOTHING

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I. THE DEVELOPMENT OF TESTS AND SCALES

The common method of evaluating children's abilities is a matter of judgment and personal opinion with instructors. There have been various investigations which show that the judgment of the most experienced and best trained teachers concerning children's abilities is not reliable. One such investigation is reported in "Measurements of Certain Elements of Hand Sewing" by Dr. Katharine Murdoch. The judgments of teachers with similar training and experience vary to a large extent. Two marks given by the same teacher on the same piece of work but at different times may also vary. All teachers experience difficulty in marking work accurately. Opinion wavers as to what mark should be given. Should the mark be A or A —, or should the term grade be C or B? The teacher's passing mood or frame of mind may decide the question. The need for an accurate and objective means of measuring abilities is obvious. Standardized tests and scales offer this objective means of measurement. All sciences have developed and use measuring instruments. Temperatures are measured by thermometers. Weights are measured by scales. Such instruments have made possible the progress of science. Education is fast becoming scientific in its nature. In order to put education upon a really sound and scientific basis we must have instruments to measure the results of our teaching. If the teacher of clothing and textiles is to improve her technique of teaching she must have an accurate means of measuring and comparing results. The need for standardized tests and scales in clothing and textiles is as great as in any other school subject.

Development of tests. In order to develop tests and scales in textiles and clothing it is necessary to analyze the subject matter in terms of the mental processes involved. The subject matter involves much the same types of learning as that of any other study. For example, a clothing and textile course includes the acquisition of skill, the exercise of problem-solving abilities, the acquisition of information, and the development of appreciation. Hand and machine sewing require skill, textile study requires the acquisition of information, the planning of a

garment requires judgment and discrimination, and the choice of a style requires appreciation of line and color. Before we can measure accurately the results of instruction in clothing and textile courses we need to develop tests and scales that are so constructed as to measure the mental processes involved. The specific outcomes from a course in textiles and clothing should be determined. Then tests and scales can be constructed to measure abilities in these specific things.

Description of tests. Of all the specific outcomes expected in a course of textiles and clothing, skill is the easiest to measure. For this reason probably the first attempts at standardized tests and scales in the field of textiles and clothing are for the measurement of skill. The Murdoch scale is a scale for the measurement of six stitches in hand sewing. It consists of photographic reproductions of some samplers made by children. Fifteen samplers of varying degrees of excellence were photographed and have been assigned numerical values. These fifteen samplers were selected from sewing done by 1,212 individuals and judged by many judges. A scientific and statistical procedure, too long to be described here, was followed in order to select the fifteen samplers which show equal steps in degrees of excellence. Unless this procedure were followed the scale would be of no more value than a scale made according to the opinion of one teacher and from samples taken from one class.

The Knapp and Williams Scale is a scale for the measurement of ability in machine sewing. A long careful procedure was also followed in the construction of this scale. An attempt was made to analyze the factors which contribute to the excellence of machine sewing. Five factors, spacing, constructive elements, tension, length of stitch, and neatness, were decided upon as the elements which contribute to good machine sewing. The scale (not yet published) consists of photographic reproduction of samples showing varying degrees of excellence in each of these factors. For example, three qualities of excellence are shown for spacing, three qualities of excellence in neatness and so on for each of the five factors. Two scales were made, one for judging the use of machine stitching in the construction of a hem on a straight edge and the other for the use of machine stitching in a French seam.

To use either the Knapp and Williams or the Murdoch scale the work to be judged is compared with the samples shown in the scale. The work to be judged need not be a sampler, made in the same way as those shown in the scale. The hand sewing stitches or machine made hems and French seams as used in garments can also be judged. A difference

between the two scales is noted in that using the scale for hand sewing one judges for general merit and in using the one for machine sewing one judges separately each of the factors contributing to good machine sewing.

The Trilling and Bowman Tests have been designed to test the acquisition of information and the ability to reason in situations involving the use of material presented in a textile and clothing course. The following exercise is an example taken from these tests.

I. To test material for wool, check the best test to use from the following list.

1. Examine the sample under the microscope.
2. Burn samples of both warp and woof threads, noticing the odor and type of residue.
3. Boil the sample for a few minutes to remove sizing.

II. To test a material for true and artificial silk, check the test in the following list which it would be best to use.

1. The burning test.
2. The microscopic test.
3. The breaking test.

The following exercise is an example taken from the reasoning test on dress design.

I. If you had plenty of money to buy yourself a school dress for next winter would you buy:

1. A velvet dress.
2. A serge dress.
3. A broadcloth dress.
4. A taffeta silk dress.

II. You are to design a party dress for a very tall girl of about your own age. Should you use:

1. Striped material with panel drapes.
2. Plain material with ruffles, shirring, or horizontal tucks.
3. Embroidered material with a wide girdle and plaited skirt.

II. TESTS AND SCALES AS AN AID IN THE REORGANIZATION OF COURSES

Need for reorganization of courses. The tests and scales described in the foregoing can be of great aid in the organization and teaching of home economics. In a recent investigation conducted by the Department of Home Economics in the University of Chicago, some specific reasons for

the reorganization of home economics courses were brought to light. First, there is no general practice as to the distribution of topics through the grades. For example, it is just as probable that the same material in textile study will be introduced in the fifth as in the ninth grade. Second, there is no established basis for the sequence of topics. Third, there has been practically no attempt to establish minimal essentials or standards of attainment.

Distribution of topics. It is interesting to note how tests and scales can be an aid in determining what the general practice should be in regard to these points. First, there is no general practice as to the distribution of topics through the grades. For example, we do not know in what grade or at what age machine sewing should be introduced. Many of us have opinions as to the proper time but after all is said it is mere opinion. An examination of courses of study shows that in some schools it is introduced in the sixth grade, in others not until the seventh and eighth, and in still others not until the high school. Obviously the opinions of teachers vary in this respect. All these opinions can not be correct. There must be one period of the child's development when machine sewing can be taught most efficiently and economically. By means of tests it would be possible to determine this period. Machine sewing might be taught to sixth grade classes and continued when the classes become seventh grade classes. At the end of this time the classes could be tested and their score compared with the score made by classes which were taught machine sewing only in the seventh grade. It is possible that the latter would make the higher score. By delaying the instruction in machine sewing for a year the children may gain the ability to acquire a skill more rapidly and at the same time more effectively. Of course it would be necessary to control the conditions carefully so that the results would have real meaning.

By such experimentation, testing, and comparison of results it should be possible to tell where many other topics should be introduced. For example, the clothing course requires the cutting and fitting of a garment. This cutting and fitting of a garment requires the exercise of those mental processes known as reasoning, judgment, and discrimination. By means of tests and experimentation it should be possible to determine at what period girls best develop this ability. This does not mean that at one age we would turn our attention entirely to the development of skill, at another age to the development of the reasoning faculties, at still another time to the acquisition of information. Learn-

ing can not be so organized and pigeon-holed. However, by experimentation we could determine at what age to emphasize certain phases of subject matter. For example learning to sew on the machine is largely a matter of skill although it involves discrimination and judgment. The study of textiles can be made chiefly a matter of the acquisition of information or of the exercise of problem-solving abilities. It is a matter of emphasis and the emphasis should depend upon the period of the child's development.

Sequence of projects. A second specific need for the reorganization of courses is the lack of an established basis for the sequence of projects. Again tests can be an aid in this reorganization of courses. Everyone should agree that projects should be arranged upon a basis of steadily increasing difficulty. Yet one course of study states that the girls may choose between the making of a towel and napkin and a child's dress. All sewing teachers would agree that a dress is more difficult than a towel and napkin. Of course this is an extreme example yet other courses of study show very little attempt to organize projects so that they are of increasing difficulty. Many courses of study make such statements as the following: "Much the same outline in the eighth as in the seventh only more theory," "Continue the work of other grades," "Seventh year chiefly reviews," or "Scope of the work in the sixth grade much the same as in the fifth." Such statements do not indicate that there is a basis upon which projects are chosen which will make for progress in learning. Again it is a matter of opinions. Even the more experienced teachers can not really tell what projects are most difficult for learners. For example, in using the tests on machine sewing described above it was discovered that the hem is more difficult to make but the French seam is more difficult for the girls to understand. A question arises as to whether projects should be selected on a basis of increasing difficulty in technique or increasing difficulty in comprehension. However it is not the purpose of this article to discuss this question but to point out how tests and scales can be an aid in establishing a basis for the sequence of topics.

Minimal essentials. A third reason for the chaotic condition of clothing and textile courses as revealed by the investigation is the failure to establish minimal essentials. Every sewing teacher has her opinion as to what her girls should be able to do at the end of a sewing course. Yet it is only her opinion and it can not be of as much value as a standard set by the testing of a large number of children. For example, if

the Trilling and Bowman Content Tests were given to several hundred children the score made by the majority would be the standard of attainment that could be expected from other children of the same age who had been given the same work. If tests were designed for the various phases of subject matter and a standard set in this way the tests would be of great help to the class-room teacher. She could determine how her children compared with the standards set by the majority of children. She could also detect weaknesses in her own teaching and emphasize her work accordingly.

In order to make most effective our courses in clothing and textiles, we need careful and scientific reorganization. Standardized tests and scales are tools which may be used for this purpose. It is not claimed that by means of tests alone can this be accomplished, but tests and scales should play an important part. First, we need tests which will measure specific results accurately. Second, there should be widespread use of the tests and a comparison of results. Third, courses should be organized and taught according to the conclusions drawn. In this way tests and scales may be an aid in organizing our clothing and textile courses on a sound and scientific basis.

A STUDY OF CLOTHING PURCHASING HABITS¹

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In presenting this report of a study of purchasing habits, acknowledgment is made of the generous coöperation by many busy people in obtaining the material used. It is not a report of work done by any one person, but summarizes the work done in Minnesota only. The reports of service dresses from other states confirmed the inferences drawn from this Minnesota work, which is only a small part of the whole survey of the central committee on standardization, of which Miriam Birdseye is chairman.

The information collected concerning service dresses may well be used as a specific illustration of an intensive study of purchasing habits, the

¹ Presented at the Thirteenth⁷ Annual Meeting of the American Home Economics Association, Colorado Springs, June, 1920.

type of garment being one quite generally used. In this study, the term "service dress" is used by the committee to indicate the type of dress worn by the business woman daily, and on the street by the homemaker, excluding garments for formal social wear, or for house work. It was found necessary in some cases to include the wool or silk suit under this head, as many women, including homemakers, use the suit skirt and a blouse in place of such a dress.

Material for this particular study was gathered by several groups, under the direction of Marion Weller, chairman of the advisory committee on service dresses. These groups included the clothing and textiles sections of both the college and state home economics associations in Minnesota. Approximately 1500 to 2000 questionnaires were sent out, many by the chairman of the committee, and many others by the secretary of the local Division of Women's Activities of the Department of Justice. As a result, there are represented in this report teachers, university students, clerks, and homemakers from small towns as well as cities. The student association canvassed the students, staff, and clerks of the college. A large number of Minneapolis teachers were reached through a group meeting of all home economics teachers in the public schools of that city. The data from homemakers were chiefly obtained through the coöperation of the women's clubs, questionnaires having been taken to the club meeting, explained, filled out, and collected. The results obtained in this way were rather more accurate and satisfactory than would have been the case had the blanks been distributed promiscuously, and a much greater number were returned. All of the teachers, students, and clerks have been grouped together, and the club women divided into two groups—those living in the three larger cities of Minnesota (Minneapolis, St. Paul, and Duluth), and those living in some 65 smaller towns scattered throughout the state.

The total number of questionnaires returned was 876, of which approximately one-sixth were from club women in the three cities, one-third from club women in smaller towns, and one-half from teachers, students, and clerks. About one-tenth were either blank or incorrectly filled out, so that the actual number of reports used was 789, a number sufficiently large to be considered a fair sample. It is to be regretted, however, that this sample omits certain important groups having markedly different purchasing habits, namely, those living on restricted incomes, and the wealthy. It might well be said that the results of this study are true only for persons with medium incomes.

The questionnaires used asked people to state the materials purchased in the last two years for wool and silk service dresses, indicating those purchased by the yard, and those bought ready made. It was found necessary to change this description to materials now in use, for the reason that many women stated that they had bought nothing in the last two years. This information made it possible to study not only the materials used, but also, with sufficient accuracy, the extent to which they were used. When reports began to come in, it was at once evident that many persons do not know by name the fabrics they wear day by day, as was indicated by the use of the terms wool or silk in place of the fabric name.

The following observations were made:

First. Wool is used more widely than silk for service dresses in Minnesota, 91 per cent reporting the use of wool, and 61 per cent, the use of silk for this purpose, some reporting the use of both wool and silk, thus clearly showing the predominating importance of wool for such garments in a northern climate.

Second. The number of kinds of fabrics used for service dresses, combining those purchased by the yard, and those purchased ready made, is large and variable; 34 for wool, and 30 for silk, the number of materials used by the yard being greater than the number bought ready made. The professional group use the largest number and the city club women use the fewest. This may possibly be explained on the basis of the apparent correlation between the number of persons reporting in each group, and the number of kinds of materials used by each group, the teachers being the largest and the city club women the smallest group.

Third. All fabrics are not equally popular. A very few lead with an astonishing majority; perhaps one-third to one-half are used with sufficient frequency to be significant, and the rest are used only occasionally. To illustrate this point, we need only to note that 55 per cent of all wool dresses reported are made of serge, and approximately 50 per cent of silk dresses are made of taffeta or satin, taffeta being used slightly more than satin. Furthermore, two other wool fabrics, tricotine and jersey, are used for 21 per cent of the wool dresses in addition to the 55 per cent made of serge, making a total of 76 per cent of the wool dresses made from only three fabrics. Four others, poplin, broadcloth, gabardine, and velour, have a moderate amount of use, while the remaining 27 kinds of materials are used for only 6 per cent of all the wool dresses. The same situation exists in regard to choice of silk fabrics. Only 10

per cent of the dresses are made of 21 of the 30 kinds of silk listed, while 7 others hold an intermediate position, in addition to satin and taffeta, which were used for 50 per cent. In other words, the purchasing habits of these people lead them to use only about six different materials for about nine-tenths of their wool or silk service dresses. This general statement holds true approximately in this study, for each group, as well as for the whole.

Fourth. Equally accurate information is not at present available concerning purchasing habits from the point of view of either wholesale or retail sales. An attempt was made to approximate this information by interviews with department managers and buyers in retail stores. One wholesale establishment was visited. All agreed on the preëminent position of serge, as a material purchased by people living on moderate incomes, for service dresses, but beyond that there was no agreement, short time fluctuations in sales somewhat clouding their informal verbal reports. Were it possible to make a similar study of sales records in one or two representative stores, an interesting and valuable check for this study would be provided.

Fifth. The relation of style to the choice of material for service dresses could not be ascertained. This also would best be determined by a study of past sales records, combined with a study of style variation. The relation of the present vogue of serge to the widespread use of that material was noted by the merchants as a difficult question to answer.

Sixth. The use of trade marked fabrics for service dresses is very limited, only two such being observed out of about 1150 instances of wool used, and 30 from over 750 instances of silk. There are many more trade marked silks available than similarly marked wool fabrics which probably accounts for the difference between wool and silk.

A number of points may also be noted which have a bearing upon the teaching of textiles and clothing. The need for more wide spread knowledge of standard fabrics is very clearly pointed out. It is of basic importance that the consumer should buy knowingly, if she is to buy wisely and economically. Such an ideal could be realized with greater completeness, were there more standardization, both of fabrics and of names of materials, than is to be found at present. Certain standard grades of undermuslins—approximately equivalent in specification, name, and price throughout the country before the war—could be cited as illustrations of these points. Competition has fostered the production of many novelty materials of unknown standard, and has also given, in some

cases, more than one name to materials which are identical, except for the fact that they are the product of competing manufacturers. An illustration of this confusing situation is to be observed in the loose and varied use of the terms,—gabardine, tricotine, and Poiret twill, as well as nainsook and batiste in undermuslins.

The work with service dresses included one part which, while it is not strictly a study of consumption habits, is intimately related to them and of great importance, namely, the listing of desirable characteristics for some of these widely used materials, which was called for under division II of the general plan for the survey. A detailed discussion of this matter can not be given at this time, other than to mention its stimulating effects in class, but it should be noted that the demands made by the consumer as to characteristics and wearing qualities of fabrics must be reasonable if they are to do good, and not harm the cause. It surely is not reasonable to ask that jersey shall not stretch, when the very nature of the knitted fabric makes that one of its most marked characteristics. Likewise, it is a waste of time to ask for serge, or wool poplin, or any other worsted fabric, made of combed, tightly twisted, closely woven yarns, that will not "shine." The "shine" is the inevitable result of the combination of these greatly to be desired qualities, plus the wear which they make possible.

In conclusion, more should be known concerning the purchasing habits of different groups of people as regards clothing, and concerning the basic reasons or causes underlying a variation of these habits among such groups. This study has given some information as to what people buy, none as to why they buy, or what they ought to buy—for this more is needed. Information from groups having lower incomes is desirable, but some method other than the general questionnaire must be devised in order to obtain such data. There is a practical necessity for knowing the purchasing habits of different groups, because of the many types represented in textiles and clothing classes. For a similar reason definite information might be desirable concerning groups living in different geographical regions, for example, Minnesota, California, Florida.

The entire survey of which this study is a part indicates that there is still a place for emphasis on fabric study in textiles and clothing class work, especially on standard fabrics, and the relation between their properties and use. The whole hearted response and widespread interest in this piece of work should prove to be sufficient encouragement for further investigation along similar lines.

PARENTS' MEETINGS IN THE NEW YORK SCHOOLS

AGNES DALEY

Home Economics Department, New York City Schools

"Are we discouraged?" "No, not we."

This slogan, used so much by our soldiers in the late war when guns and ammunition played the all important rôle, might well be applied to another kind of warfare, that which is being waged on malnutrition with its ammunition of right food facts, fired by means of mothers' meetings. Our reports show that attendance at these meetings begins at zero and runs the gamut to 300. We might quote the teacher who after very special effort to reach the mothers and much preparation to make the meeting pleasant and profitable did not have a single one attend, but undaunted called another meeting—"The mothers seem hard to get, but this week we had four; they seemed interested and promised to come again." Another reports only two present as a result of 70 invitations to an informal tea to meet the class teachers, adding, "Raining hard." She sent 34 invitations for the following day with five responses. She adds "We hope in time to have a meeting to which all the mothers will come." Oh no, we are not discouraged!

Two others appeared at one school in response to a widely sent invitation. One of these announced upon her arrival, "I have raised six children to be self-supporting, you can't teach me how to feed my children, but I thought I would come and find out what you had to say." She remained an hour. The teacher talked in the most informal way with these two mothers. When they were leaving, the skeptical mother admitted that she had learned a good many things.

The means used to get the mothers together have been many and various. One of the best has been coöperation with the kindergarten teachers. We find that the mothers of little children will respond to an invitation and we find, too, that we usually get more of the younger mothers. Those joint meetings are held sometimes in the kindergarten and sometimes in the school kitchen. The kindergarten teachers look after the social side of the meeting and the cooking teachers give a well prepared talk illustrated with typical meals for children. These meals have been prepared by children and arranged on trays. Posters also are used to help visualize the facts taught and some literature is distributed. We have found that after one of these meetings the women are eager to talk and gather in groups about the teachers present.

The following illustrations will serve to show the interest that has been awakened: At one of the gatherings a mother, dressed in mourning, told the cooking teacher she had recently lost her husband of tuberculosis, and that she had a little daughter who, she feared, had inherited a tendency to this disease. She was most anxious to do the right thing for her child. The cooking teacher then and there made an appointment to go to her home where they could quietly talk over the child's diet and general care. Another mother said that her little boy refused to eat breakfast; what could she do? Again the teacher came to the rescue, telling her she would see the boy and do all that she could to show him the importance of eating good food before coming to school.

There has been an opportunity for originality on the part of the teachers holding these meetings. Plays have been written and staged to the delight of the children and the interest of parents; stories have been told, with illustrations. Personal invitations, many hundreds, even thousands, have been sent into the homes. Children have written invitations, each to his own mother. Several teachers have used graduation day to further the food mission, for on this day there was no trouble in getting both mothers and fathers, who were invited to visit the kitchen after the exercises. One teacher closed her door when the room was filled and gave a five minute talk. She says, "The crowd outside waited, sure they were missing something," and reports that 240 mothers and fathers listened to her little talks.

When the schools were having peace pageants, there was an unusual opportunity for food meetings. Numbers of parents visited the schools and were asked to visit the kitchens before leaving, and, once there, the cooking teacher seized the opportunity to talk on the kind of food needed by their children.

There has been fine coöperation between school nurses and cooking teachers. Joint meetings have been held at which mothers were encouraged to cook typical dishes, and this type of meeting furnished a social element as it gave opportunity for friendly discussion of the work in hand. Sometimes the children cooked meals while mothers looked on; this always begets a lively interest, for mothers like to see their children do things. Parents' organizations have been helpful in this work. They have conducted food meetings at which the domestic science teachers have had the program. One such organization furnished scales to the school and planned with the principal for regular meetings for the discussion of malnutrition.

The Child Health reels furnished by the Government have made possible the advertisement of a "movie" for parents' meetings, and this is usually a drawing card.

At Mothers' meetings, in the past, it has been a very general custom to have tea and crackers or some simple cake. We find now in a number of reports sent us that corn and potato chowder is becoming the typical refreshment offered.

Effort has not been confined to schools in which home economics is taught. Very successful meetings have been held in other schools, due in a large measure to the interest shown by the principals.

We are looking for greater results this year.

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STUDENT CONTRIBUTIONS

HOME ECONOMICS DAY

MAIDA JOHNSON

Iowa State College

Home Economics day! Girls at Iowa State College had their long-cherished dreams come true when the deans set aside half a day for a department celebration.

Of course the "Ags" and Engineers had always called on the girls for help in their campfires, carnivals, and St. Patrick's day celebrations, but never before had the girls had a chance to run such an affair themselves.

Immediately every home economics student in school set out to make plans for the day which would insure its success and a granting of a day every year for this purpose. The home economics building became a buzzing, busy place, all toward the same end—a truly successful "H. Ec" day.

A tag day was held on which tags were sold for a small sum to all who wanted to come; the money to cover the expenses for the day.

On the appointed day the whole college started out to satisfy its curiosity—particularly the men, for they were rather skeptical as to anything the girls might manage.

Strong armed police women, decked out in regular "cop" coats, stars, and clubs, guarded the right of way and kept the "mob" on a move around a designated route.

In the first room were samples of art work and two small rooms curtained off. One, as a shining example of what a room should be, was beautifully decorated according to all rules of color, proportion, and order. The other was most interesting, being the faithful reproduction of the usual college girl's room—decorated wonderfully with dance programs, life-size men's pictures, and drapes, pincushions, and couch covers of varied hues.

The next room showed the development of cooking equipment, from the mortar and pestle to the most modern of electric outfits. Girls dressed to suit the different periods demonstrated the different utensils.

Told to "keep moving please" we wandered on to see the development of clothing. Here were models decked out in dresses of every period from the dress of leaves to the extreme 1920 gown.

After viewing all these things we then pushed onward—literally pushed and were pushed—and soon we were to discover the reason, for on the floor above was food. Real home economics food—sandwiches, coffee, individual mince pies topped with ice cream, and popcorn balls. When these booths were reached even the most critical succumbed and pronounced the day a success.

While all this was going on in the home economics building, there was a continuous program being put on by the girls' physical culture department. Three special features were put on during the afternoon in the girls' gymnasium, the tags admitting the holder to only one of the three. Baseball, volley ball, and basket ball games were played between picked teams. The enthusiasm over these events exceeded all bounds.

Over in the art studios were special exhibits prepared by the art department. Here the applied design and houseplanning classes displayed their work.

In the evening two shows of vaudeville were staged by the actresses among the "H.Ec" students. Clever and original stunts won the wholehearted approval of the two packed houses which viewed them.

The work of the day was divided among the various girls organizations on the campus. The Home Economics Club was in charge, while Omicron Nu, Theta Sigma Phi, Mortar Board, and Jack O'Lantern had their duties.

Needless to say, hereafter, "H.Ec" day will be an annual affair.

ANSWER THE RED CROSS ROLL CALL, [November 11, Armistice Day, to November 25, Thanksgiving.

FOR THE HOMEMAKER

THE USE OF MALTOSE SIRUP FOR CANDY MAKING

Successful use of maltose sirup as a substitute for a part of the sugar used in the manufacture of ice cream and certain soft drinks, and in candy making, has been demonstrated by experiments by the Bureau of Chemistry of the United States Department of Agriculture. Experiments in the use of maltose sirup in canning fruits and vegetables are now under way.

Maltose sirup is prepared usually from corn, but sometimes from rice, by the action of a small proportion of barley malt. For the reason, however, that the process necessary for its manufacture calls for the use of expensive equipment which is not available in the home, it has not been found possible to make this product successfully on a small scale on the farm or in the home. A number of large manufacturers are now supplying maltose sirup to commercial bakers, confectioners, and soft drink manufacturers. Certain manufacturers have already placed maltose sirup upon the retail market in small packages for the use of the housewife and it is anticipated that the sirup will be more generally available to the retail trade in the near future.

Much of the information on the use of maltose sirup in candy making is not yet ready for publication, but a few of the recipes developed by the Bureau of Chemistry of the Department of Agriculture follow:

Candy Squares. Sugar, 11 ounces; maltose sirup, 4 ounces; water, 6-7 tablespoonfuls.

Put the sugar, water, and sirup in a small saucepan of twice the capacity apparently required for the mixture; stir over the fire and boil to "soft ball" (238°F.); remove from the fire, let stand for 5 minutes; then stir and cream by rubbing the sirup against the inside of the kettle with a wooden paddle. (An 8-inch paddle is a good size to protect the hand from burns.) During this operation the batch can be colored and flavored to suit. After about 5 to 7 minutes' stirring and creaming the batch will appear milky and creamy, when it should be poured out on greased or waxed paper laid on wood, the paper being confined with strips

or bars of wood, or other material, to make a space 5 by 10 inches. Let the batch stand till set; scratch with the point of a knife in squares, and break apart when cold. The customary flavors are: mint, white; wintergreen, pink; lemon, yellow; orange, orange; chocolate. A few drops of flavor is generally sufficient. For chocolate, shave 1 ounce bitter chocolate and add after the candy has boiled.

Cocoanut kisses. Sugar, 8 ounces; maltose sirup, 3 ounces; water, 6 tablespoonfuls; cocoanut (dried), 3 ounces (dried cocoanut moistened with 3 teaspoonfuls of water).

Boil sugar, water and sirup to soft ball (240°F.), remove from fire, let stand for 5 minutes, then stir and cream for 4 minutes; add cocoanut and desired flavor and color; continue creaming until batch gets thick and mushy, when it can be poured and treated like the candy squares, or get the batch quite stiff and spoon out in kisses, about the size of one's thumb, on waxed or greased paper laid on wood. Customary flavors and colors are: vanilla, white; strawberry, pink; chocolate. For the chocolate kisses add one ounce of bitter or baking chocolate.

Molasses kisses. Molasses, 6 ounces; maltose sirup, 6 ounces; butter, 1 ounce.

Stir and boil to hard ball (254°F.); test as for caramels; pour on greased cold slab or pan; when firm enough to handle, add teaspoonful of vanilla extract and pull till light and fluffy (on hook, large nail, or spike); when well pulled spin or stretch in sticks about as thick as one's thumb, cut in pieces with scissors and wrap each piece in waxed paper. Corn starch, flour, or 4X sugar will prevent candy from sticking to hands or table.

Caramels. Sugar, 8 ounces; maltose sirup, 11 ounces; evaporated milk or cream, 11 ounces; butter, 3 ounces.

Dissolve sugar and sirup in one-third of the milk over the fire; boil, *stirring continuously* until batch becomes thick; add more milk, cook again until thick, and repeat until all the milk is used; add butter. When the batch appears very thick or stiff, remove from fire, and test by spreading a teaspoonful on a greased cold plate or by dropping in cold water. When ready to pour, the batch, on testing, should be very stiff yet easily chewable; if too soft, boil a little longer; if too hard stir a little milk or water into it. When the right degree of stiffness is obtained add vanilla, mix, and pour on a greased cold slab or pan and set in a cool, dry place. When cold, the candy can be cut with knife or scissors into pieces and wrapped in waxed paper. Nut meats or bitter chocolate (2 to 3 ounces) may be added with the vanilla.

It is best to use a good-sized paddle, 10 to 12 inches long, in order to prevent burns from the foaming and spattering while the candy is cooking.

Salt water taffy kisses. Sugar, 2 ounces; maltose sirup, 8 ounces; butter, 1 ounce; water, 2 tablespoonfuls; pinch of salt.

Boil sugar, water and sirup to hard ball, stirring sufficiently to prevent scorching; add and stir in salt and butter; test as for caramels; pour on greased, cold slab or pan; finish like the molasses kisses.

This candy can be made any color and flavor by adding coloring and flavoring just before or during pulling.

For chocolate kisses add $1\frac{1}{2}$ ounces bitter chocolate.

THE VALUE OF AN ALLOWANCE

The following statement of the child's point of view in regard to an allowance was written by a high school sophomore in Wisconsin as reported in "Homemaking in Wisconsin." Parents should read it with care.—THE EDITOR.

A child likes to have some spending money that is really his own. He likes to know that it is his to spend as he will, and that he may save some of it if he can, and so start a bank account of his own. The child's parents may furnish a means of gratifying this desire by giving him an allowance.

The allowance may be given weekly or monthly, whichever way seems better. If the allowance is a small one, it must not be expected, of course, to cover the child's clothing expenses, but only to cover the school and miscellaneous expenses.

The value of an allowance is great. It teaches the child to carefully manage his finances, and not to go beyond his means. He knows that when his allowance is gone, he can have no more, until the next "pay day" comes. He, alone, will be responsible for the way he spends his money, and the parents should advise him not to spend it foolishly. Another benefit derived from an allowance is that the child will appreciate the value of money, and should then learn to spend it wisely. He will probably try to save a little of his allowance every week, to put into the bank, and this is a habit which should be encouraged, as it teaches him to make provision for the future.—*Helen Wind.*

COST OF LIVING IN CANADA

NORMAN S. RANKIN

Based upon the figures of the *Labor Gazette* of Ottawa a comparative chart of the cost of living in the fourteen principal cities of Canada has been prepared by the *Vancouver Sun*, which furnishes a very interesting record. After careful computation the average family is taken to consist of five persons, and the weekly family budget includes meats, groceries, fuel and light, clothing and rent. Following is a list of cities in their order of high prices: Regina, St. John, Winnipeg, Toronto, Ottawa, Hamilton, Calgary, Halifax, Quebec, Montreal, Vancouver, Victoria, Westminster.

For the families studied, rent in 1919 was highest in Regina, with an average of \$8.08 per week, and lowest in St. John, with \$3.46. The largest increase in rent during the period was in the city of Victoria where the weekly amount rose from \$3.23 to \$4.61, or \$1.38. Halifax rose \$1.15, Toronto 0.92, Westminster, 0.82, St. John, 0.46, and Hamilton, 0.30. Other cities remained the same with the exception of Ottawa which registered the only drop, one of 0.23.

Fuel and light were highest in Regina, where they formed an average item of \$3.43 in the family's weekly expenditure, and lowest in Calgary amounting to the sum of \$2.09 per week. The average increase throughout the fourteen cities was 42 cents. The only drop in expenses of this kind was one of 13 cents in Hamilton, where this item in the weekly account fell from \$3.51 in 1918 to \$3.38 in 1919.

The grocery bill in 1919 came highest in Victoria with an item of \$10.23 in the family weekly account, though Halifax ran a close second with \$10.14. Groceries were apparently lowest in Hamilton, with \$8.09 only being deducted each week from the family income for the grocery bill. The average increase in the cost of groceries per week over the fourteen cities was nearly 65 cents, the highest increase being \$1.30 in Winnipeg and the lowest 41 cents in Calgary. Halifax and Victoria also saw increases of more than a dollar in this item.

The weekly family expenditure for the items given ranged, in 1918, from a minimum of \$19.17 in Victoria to a maximum of \$26.49 in Regina, and in 1919, from a minimum of \$21.85 in Westminster to a maximum of \$28.55 in Regina.

MUSIC IN THE HOME

The Peabody Conservatory of Music in Baltimore has conducted a class in chorus singing for children, meeting each Saturday morning during several seasons. The spontaneity and joy of the children who flock to this class and the fact that many who show some talent and can give more time are found in the advanced class the next year are evidence of the success of the plan. Mrs. Henrietta Baker Lowe, the instructor, in a talk before the Child Welfare Club, suggested the following ways in which the musical taste of children might be developed, and gave a valuable bibliography.

Have a musical "grace" at meals. Sing a musical good night "round." Give musical books and books on music for presents.

Let the elders set the example of singing everywhere, especially while busy about the house. Let the elders discuss music, go to the music store and buy music and records.

Have the children learn new songs beautifully for surprises. Encourage the older children to teach new songs to the younger.

Have the several members of the family study different instruments so as to make a family ensemble.

Sing at picnics and while walking. Use singing games for the younger children.

Have a talking machine with good records. Sing softly with talking machine with a good voice record.

See that children sing what they have learned at school.

BIBLIOGRAPHY*

I. For singing to young children and for children to learn:

Mother Goose's Nursery Rhymes. Elliott, 50 cents.

Songs for a Little Child's Day. Eleanor Smith. Milton Bradley Co. \$1.50.

Records. Mother Goose, Victor No. 17004; Baa, Baa, Black Sheep, No. 17937, 85 cents; Lilts and Lyrics, No. 17686, 85 cents. Sing softly, pitch high, sing rhythmically and rather fast.

Marching and Free Movement:

Rhythm and Action. Norton. Oliver Ditson, \$1.00.

Records. Victor 18216 and 64201. March, hop, run, skip, fly, just as music suggests.

Singing Games.

Children's Old and New Singing Games. Mari Hofer. Flanagan Co., Chicago.

Record. Mulberry Bush, 17104 (see above).

*A list of books, records, and suggestions has been compiled and will be mimeographed for distribution. If 100 people want it, it can be done at little cost, five cents a copy probably. Write to Mrs. Lowe at the Peabody Conservatory.

II. Songs for older children to sing:

Grammar School Song Book. Farnsworth. Scribner & Co., 75 cents.

Songs of Camp Fire Girls. Neidlinger. Camp Fire Outfitting Co., 32 W. 24th St., N. Y., 25 cents.

Songs for Beginning Alto (Records on request). Congdon Primer No. IV.—Charles H. Congdon, 200 5th Ave., N. Y. Let mother or older friends at first sing the alto, with children singing soprano softly so as to hear both voices.

Boy Scouts Book. C. C. Birchard & Co., Boston.

III. Songs for the family (children singing choruses and easy parts).

Twice 55 Songs. C. C. Birchard & Co. Buy a half-dozen so that each person has one.

Songs with Violin. Half Dollar Series. Ditson & Co.

Hymnals for American Youth. Century Co.

Children's Hymnal. Eleanor Smith. American Book Co.

College Songs. Ditson & Co.

Sample Records:

89093	Fiddle and I, \$2.00	} From songs with violin.
45064	Spring Song, \$1.00	
17532	Six Songs, \$0.85	
45135	(2 songs) \$1.00	
45114	(2 songs) \$1.00	

Community Singing Records (see Victor Catalog) are good accompaniments to sing with. There are five records containing from 2 to 4 songs—each 85 cents. The music is in "Twice 55 Songs."

See also Boola Song (16860)—85 cents.

IV. Family music collections and books about music:

Family music book. Schirmer, \$2.50.

Half Dollar Series (collections of all kinds). Ditson.

Home Circle (collections of all kinds). Fischer.

Books of Musical Knowledge. Elson. Houghton Mifflin, \$3.50

Making the Family Musical. Farnsworth. Macmillan.

From buttoning shoes to washing dishes, there is an easy and an awkward way of doing all work. Recent experiments made by the Office of Home Economics of the United States Department of Agriculture show that the easy way actually saves energy.

It was found in the homely everyday task of dish washing that, when a woman washed dishes on a table so low that she was obliged to bend over, her energy output was 30 calories per hour. Washing dishes on a table that was a little too high for comfort required 25 calories per hour, while only 21 calories were used when the working surface was of the right height.

EDITORIAL

The Textile Section contributed the following papers and reports as part of the program of the meeting of the Association at Colorado Springs.

Miriam Birdseye, chairman of the standardization committee, presented the general plan made by this committee and a review of the excellent work accomplished by them during the year, including the large scale test for silk (petticoats made of standardized silk), the small piece of silk test, cotton and serge testing, and the purchasing habits questionnaires.

Paul T. Cherington, of Boston, discussed textile legislation, including the five textile bills introduced in the last Congress; the present powers of the Federal Trade Commission to protect the consumer; state laws, now operative, affecting textiles; the type of legislation needed and reasons for needing it; and how home economics women can help with textile legislation.

A discussion of coöperation between the textile laboratory and the mercantile world was presented by Grace Denny of the University of Washington.

Ethel Phelps of the University of Minnesota gave the report of a study of clothing purchasing habits.

The need of teaching design in home economics was presented by Virginia Alexander of the College of Industrial Arts, Denton, Texas.

A discussion of short cuts in teaching clothing, by Celestine Schmidt, was illustrated with lantern slides.

A paper on the conduction of heat by textile fibers and the relative rate of absorption, and the rate of evaporation of water, was presented by Florence Caton of the University of Missouri.

A report from the committee on research on textiles was presented by Mabel Trilling of the University of Chicago, chairman. The monograph on analysis of home economics texts and courses of study will be available as soon as arrangements can be made for printing. Several interesting topics were announced on which research work is at present being done.

A report of the committee asking coöperation of moving picture producers, in improving the quality of home interiors, was sent by Florence Winchell of the Lincoln School, New York City, chairman. It was decided to ask Miss Winchell to continue this work and to report further progress at the next annual meeting.

Lillian Peek, State Supervisor of Home Economics, Texas, reported a summary of a girls' clothing contest, successfully carried out in Texas, in connection with which it was possible to establish a demand for shoes with sensible heels for school wear.

Work for the coming year as outlined by the Section, includes an effort to establish coöperation with merchants in furthering textile standardization, and the continuation of some unfinished work started by the standardization committee during the past year.

The officers for the coming year are: Chairman, Lillian Peek, State Supervisor of Home Economics, Austin, Texas; Secretary, Ethel Phelps, University of Minnesota.

ETHEL L. PHELPS,
Secretary, Textile Section.

THE OPEN FORUM

To the Editor of the JOURNAL:

As a grateful reader of Mrs. Max West's valuable and timely article in the August number of the JOURNAL, I desire publicly to thank her for bringing into the open, with so much tact, a matter of national importance. The question she asks in "If Not, Why Not," may, it seems to me, be summarized under three heads: What is the real purpose of education? Should that part of it carried on in schools and colleges be identical for the sexes? For what reason, at the present moment, are young people crowding into colleges and universities? In submitting these questions for our consideration Mrs. West illuminates them with many suggestive comments, to which I venture to offer a modest contribution, in the hope of arousing a discussion which shall result in a well considered, productive revision of some existing and outworn conventions.

The whole matter seems to me primarily to depend upon the correct adjustment of certain values, to which an essential preliminary is the training of public opinion to a better balanced comprehension of their relative worth.

First, must come the realization that education is a tripartite process (body-mind-spirit), life long, and continuous.

Second, to this must be linked the conviction that, as home and social life are more potent as character forming influences than are teachers, schools, or colleges, preparation for their right conduct and direction must constitute an important element in any educational curriculum.

Third, the fact must be grasped that the real purpose of education is not book learning or dollar earning, but the balanced development of each individual, organized training in the light of the world's experience in the control of self and of environment and in respect for the rights of others. The tendency for years past has been to foster an unbalanced curriculum in schools and colleges, unduly concentrated on "bread and butter" ends (under multiple disguises it is true), and to overlook the essential counterpoise which is found in the study of rightful conditions of domestic and social life, in the absence of which successful bread earning suffers a serious and too often fatal handicap. An ill balanced curriculum results, of course, in an ill balanced product. Individualism is exaggerated and yet coexists with an almost morbid gregariousness. Individual independence (miscalled liberty) is quaintly coupled with dependence upon "crowd" conditions and slavery to public opinion. The attainment of "civic worth," in its turn dependent largely on home standards, should be the ultimate aim of educational institutions, but, so much confused are educational values today, that self advancement by means of financial independence counts for more in the eyes of the masses. Hence the anxiety felt by the thoughtful as to whether adequate opportunities to correct this misapprehension by those who scheme the curriculum are offered to the adolescent population who crowd college class rooms.

To what degree the real purpose of education is ignored by the average parent is well brought out by Mrs. West, when she refers to the handing over, at five years of age, to "young girls, irresponsible, inexperienced, untrained," those little bundles of unsolidified habits, our future citizens in the making. If to understand and respect the rights of others be a primary object of education, it is obvious that so far it has not been attained; or the rights of these children would be respected in this among other matters of enduring importance. To right this wrong calls for a readjustment of values by means of a truer conception of human development and its needs, to which greater prominence ought to be given in college courses. Perhaps the recent rapid growth

of interest in child welfare will result in the revision of existing text books of anatomy and physiology; so that the conventional, ageless, sexless presentation of their subject matter may give place to new editions, in which a recital of the numerous subtle divergencies which distinguish the mature male and female bodies may be preceded by a review of the widely different and ever changing tissues and proportions of the infant and child. Such knowledge floods with light existing problems of child life in home and school, and thereby emphasizes the importance of parents as the nation's most numerous and influential educational agents. A further result would also surely be a wider differentiation in the educational curriculum of boys and girls after ten years of age.

A careful study of the play interests of school children, which I carried out some years ago, brought me convincing but unforeseen evidence of the ever increasing differentiation of interests and of attitude towards environment which occurs in boys and girls after the fifth or sixth year, in more marked degree with each succeeding year. I gravely question whether the tradition of coeducation makes adequate allowances for the development of such normal divergencies of powers and interests. The male and female organisms are complementary to each other; to dovetail their parts into a compact whole calls, not for uniformity in development, but for intelligent diversity. It was essential for women to prove, during their struggle to regain the right of equal educational opportunities with men, that they could follow the same college courses and attain to the same degree standards as their brothers. Happily, having proved their case, this demonstration is no longer necessary. But women, being the most conservative element in the world, are slow to perceive this fact, and the majority of the favored few to attain to college advantages seem content either to follow courses schemed to equip men for their various careers or merely to utilize freshman and sophomore work, designed for such ends, as more or less unsatisfactory bases for their own special callings. This undignified position of "hangers on" is detrimental alike to the race and to the individual; to the race, because it detracts from the dignity and enormous influence of woman's share in national well-being and her powerful claim to have every conceivable assistance in preparation to fulfill her national duties; to the individual because at this stage of her development a girl is liable to hold in low esteem the relatively few courses conventionally offered to women only and to consider as of poor quality the special studies con-

cerned with that vast, comprehensible, and highly exacting subject—the right care of human life in the home. The inevitable monotony and usually solitary methods of its domestic practice do not appeal to that common type today which finds stimulus only in company and pleasure outside the home circle.

I cannot but believe that were the fundamental importance of all branches of home economics once grasped (I here refer to its many expressions in trade and municipal undertakings as well as in the home), its future exponents would be offered the amplest opportunities for its study in every institution for higher education; and courses in chemistry, physics, biology, sociology, and so forth, organised for students of agriculture or engineering, would not be considered abundantly adequate for the “moulders of men” in the nation’s homes. The records of history afford a wealth of sound evidence that the quality of human life and the character of the homes in which it is reared and maintained underlie every international struggle, as well as every local industrial crisis or social problem.

The causes for the unpopularity of homemaking, reflected in these condoned conditions are too numerous and intricate to analyze here and now. The obscurity in which the homemakers’ enormous economic worth to the nation is involved bulks largely among these. The census classes them as unemployed, a dire sarcasm in truth, yet shared by the vast majority of the population. The position of “hired help” is still encumbered by feudal tradition; the whole question of house service is a tangle of economic origin, which women, the victims, whether as served or server, are too cowardly to unravel, and merely bewail what their own inertia is content to countenance. Why do not the leaders of the Home Economics Movement “grasp the nettle” and weave it into the mantle which shall neutralize the spite of the malignant fairy godmother of discord and strife through the readjustment of fake values? Incidentally I am convinced our whole presentation of home economics must be far more from the sociological side than hitherto; and in *all* courses in sociology there should be more attention given to the wide-reaching influences on national health and industrial prosperity of women’s exacting duties and economic contributions in the home. Apart from the intelligent coöperation of men, women’s burdens of national responsibilities in matters domestic become unbearable; and therein lies another reason for the growing eagerness of our girls to pursue less onerous callings.

Here I shall be reminded of the right of all women to qualify in some self supporting calling and of the diversities of human gifts, which with equal justice, demand special training for their highest development. My recognition of both claims is as sympathetic as it is whole-hearted. Civilization itself depends upon the skilled contributions of every form of human capacity, apart from the unwholesome social and economic conditions which exist where a nation's women folk are condemned to a life of crippling dependence on the earnings of one section of the community. It is just here that the problem propounded for us by Mrs. West, appals us by its myriad ramifications. Are we therefore down-hearted as to its solution? No—emphatically no. Let us start in at once—some of us—to formulate it first; seek out and classify its sources; then carefully consider their best form of removal; finally, present our case to the presidents of colleges and universities so that, with the strength of their coöperation, we may appeal to the public for its indispensable aid in that readjustment of values which shall recognize that the uplift and betterment of human life is the real aim of education.

Essential as it is to earn a living and important as it is to equip the youth of a nation for this purpose, the living will lack satisfaction unless the quality of the liver be A 1. This quality depends on home standards; a C 3 population is the product of C 3 homes. To attain the A 1 standard, our girls, who are the coming administrators of home life, need the best training our best colleges can afford in the sciences and arts upon which domestic crafts are supported; the process of effective preparation abounds in opportunities for “brain stretching” as well as for individual development along a wide variety of lines. It only remains for us who believe to shake off our inertia, our tacit acceptance of what is, and give ourselves no rest until we have materialized the “what might be.” It is not for economic competition with their brothers that we urge girls to attend college; it is not for immediate economic independence and relief from the restraints of the family circle that the doors of our universities have been thrown open to them; but to afford them rightful opportunities for self development on the one hand and of essential equipment for their highly dignified national responsibilities on the other. If their ideals are faulty, if their sense of values is defective, let us ask ourselves with whom does the fault lie, under whose influence did their sense of relative values develop?

ALICE RAVENHILL.

BOOKS AND LITERATURE

The American Home Diet. By E. V. McCOLLUM and NINA SIMMONDS. Detroit, Mich.: Frederick C. Mathews Co., 1920, pp. 237. \$3.50.

The authors' aim in this book is to present in non-technical language for the housewife the modern theories of nutrition. In Part I considerable space has been given to a description of the results of faulty diets as observed in animal experimentation and in human nutrition. Reasons are given "for the superiority of certain combinations of foods over others" and evidence offered "that the regular use of proper combinations of our common foodstuffs is the keynote to the successful feeding of the family." It is this definite and easily understood statement of the senior author's theories of diet that has made them so widely accepted.

One chapter is given to the discussion of the "Dietary Properties of the More Important American Foodstuffs." Another chapter, "Dangerous Foods and the Care of Food in the Home," includes such subjects as mushroom poisoning, oxalic acid in plants, sources of food infection, care of milk, impure water, botulism, canned milk and milk powders, dangers from raw food, safety and esthetic standards in food.

Special consideration is given to the feeding of young children, pregnant women, and nursing mothers.

Part II of the book contains menus for 365 days of the year. Illustrations are also given of menus unsatisfactory for the promotion of health and of ways of modifying these by the addition of "protective foods—milk, eggs, and leafy vegetables." It might be questioned whether some of the changes suggested in the menus are necessary. For example, would the small amounts of milk and egg added when salmon croquettes are served instead of plain canned salmon give

an increase in food value commensurate with the labor involved? Would not the cream of corn soup served in the same meal be sufficient, especially if served in generous portions?

The following of such a schedule of menus would probably be inconvenient in most households. It would seem that a statement of the approximate amounts of "protective foods" deemed necessary would be even more helpful than the menus. If the ordinary practice of serving small portions of the vegetables and salads were followed, even the use of these menus might not provide a satisfactory diet.

The statement that there is "no danger that a normal person in health will fail to eat enough where food is available and presented in an attractive form" is not true in the case of many children, as the mothers well know. It sometimes requires much patience and ingenuity to teach children to eat vegetables, and even to drink milk. Frequently, if left to themselves, they would eat too little.

The book will be exceedingly valuable to housewives and to those who are interested in giving popular instruction in the selection of food. The material is presented in a simple, definite, and interesting manner.

ELIZABETH W. MILLER.

Dietetics for High Schools. By FLORENCE WILLARD AND LUCY H. GILLETT. New York: The Macmillan Company, 1920, pp. 201.

This book is a distinct contribution to the very small group of elementary textbooks in nutrition. It is unique in being the first book to give a scientific presentation of dietetics especially for high school students. It contains a clear and concise description of "our dependence on food" (Chapter I); "a

standard for measuring food—the calorie” (Chapter II); and discusses very simply and practically energy requirements in general and the sources and functions of proteins, fats, carbohydrates, mineral elements, and vitamins (Chapters III–V). Adjustment of diet to different ages and conditions is presented under the general heading Feeding the Irving Family, which consists, besides father and mother, of a baby a year old, three boys aged three, seven, and sixteen years, respectively, and two girls, one ten and one fourteen years old. These children’s individual needs furnish the keynote for separate chapters on Food for the Baby; Food for Children from One to Five Years of Age; Food for School Children and Adults. Planning the meals for the whole family is presented as Mrs. Irving’s problem, which involves the market order and general economy in buying food. The appendix includes Diet for Abnormal Conditions (a section better omitted from a book of this type) and a few brief tables of food values.

The work is accurate and up-to-date. The points are supported and illustrated by suitable tables and charts in such number as to constitute a unique feature of a beginner’s book in nutrition. Through these the quantitative aspects of nutritional problems are fully emphasized and a distinctly scientific attitude maintained. Some of the tables (e. g., pages 57, 92, 116 and 117) are rather complicated, and will require careful treatment by teachers to secure their interpretation and use by the student. Practical problems to be assigned to students are liberally interspersed throughout the text and a few carefully selected reading references are given at the end of each chapter.

This book is designed for serious study and depends upon this intensive work for its interest. The “popular” feature of the Irving family does not mitigate the fact that the book, taken as a whole, is technical and leaves the teacher abundant opportunity to furnish illustration and inspiration. One specially commendable feature is the fact that it may be used quite as appropriately as a textbook for boys as for girls.

MARY SWARTZ ROSE,
Teachers College.

Mother and Child. Vol. 1, No. 1, June, 1920. Published by the American Child Hygiene Association, 1211 Cathedral St., Baltimore. \$2.00 a year; 25 cents a copy.

This new magazine, concerned with the health of the mother and child, is of interest to all home economics workers. Its purpose is to present information on what is being done on special needs and problems in the field of child hygiene.

The articles in the first number include: Supervising the Child of Pre-School Age, Robert D. Curtis, M.D.; A Fairy Health Teacher, Mrs. John Collier; Neo-Natal Mortality, Sir Arthur Newsholme, M.D.; Pre-Natal Clinics in Paris, Fred L. Adair, M.D.

Financial Record Book. By MARY GEARING AND EDYTHE P. HERSEY. Published by the University of Texas, Austin, Texas, 1919.

This home account book gives a form which provides for a completely classified and itemized record of the income and out-go. In order to obtain this end the book is of necessity larger and more cumbersome than the ordinary household budget and account book.

Instead of the common columnar form of classification the record is classified by pages, using the following headings: Income; Savings; Housing; Operating Expenses; Food; Clothing; Health; Donations; Education; Recreation; Incidentals; and Summaries. Each page has columnar divisions to take care of subdivisions and items.

The book has the advantage of being loose leaved. By discarding parts of the book, the keeping of the details of expenditure may be eliminated and only the more general summaries used. The book is flexible and can be adapted to the needs of various kinds of households, but the question always arises as to how much time the busy housewife can give or will give to making these adaptations. The book is most usable; it is not complex and it can be made to meet the needs of almost all households.

SARAH J. MACLEOD.

NEWS FROM THE FIELD

A Health Campaign Launched. In the fall of 1919 the girls of the Home Economics Department of the Southeastern High School, Detroit, Mich., became interested in the Ellen H. Richards Memorial Fund.

In order to send a contribution to the fund the Home Economics Department served two teas, had a candy sale, and made pies and orange marmalade, raising \$34.77. Out of this they bought a large sepia picture of Mrs. Richards, and contributed the rest to the fund.

In April, 1920, the advanced home science class voted to organize a club called the Ellen H. Richards Club. This is a service club to the school, like the H. Y. clubs of boys. The girls are living up to their motto "Eugenics and Euthenics"—right living and right thinking. During the week of June 7 to 11 they carried on a health campaign, with the aid of Charlotte Keen, faculty advisor, and the honorary members, Doris Jean Holloway and Mr. Corns, principal of Southeastern High School.

A number of charts and posters, collected from New York, Chicago, and Detroit, were displayed in the various grade rooms and corridors. The girls changed them around daily so that the pupils could see all of them. The subjects of these charts were: "Increased Use of Dairy Products," "Proper Food Combination," "Regularity of Meals," "Sleep," "Care of the Teeth," "Posture," and "Flies."

The club girls—Rachel Bailey, Dorothy Brown, Marjorie Feucht, Althea Gordon, Alice Harley, Georgia Kephart, Winifred Reid, and Florence Wixson—gave talks to advertise the campaign in their respective grade rooms.

Club luncheons were made from the week's daily menus obtained from the cafeteria and placed on the boards daily.

Something new was planned for each day. The first day opened with an exhibit in the cafeteria of a well and a poorly selected luncheon from that day's menu. The following evening the club gave a movie consisting of two reels of pictures with health suggestions and also a Vivian Martin picture. This was attended by the students and their parents. A table set for breakfast, lunch, and dinner, showing a day's diet for a high school girl was placed in the corridor on the third day. The boys received their exhibit of a day's diet in the same manner on the next day.

For a girl's "crowning glory" the club had an experienced hair dresser come out and give a talk and practical demonstration on the care of the hair and the dressing of it for various shaped faces.

This is the first campaign of health carried on in the school and the club is very grateful for the cooperation of Mr. Corns, the faculty, and the various clubs of the city who so kindly helped to make this first venture a success. The club is justly proud of this achievement and hopes to do bigger things in the future.

The Department of Home Economics of the University of Missouri has been moved to temporary quarters in four different science buildings on one of the main campuses. The new home economics building has been started and will be ready by September, 1921.

The regular faculty has been retained for this year and the following new members have been appointed: Dorothy Arnold, Instructor in Applied Art, and Frances Forbush, Assistant in Trade Dressmaking, who were appointed last winter; Bertha Whipple who came to us last summer just after receiving her M.A. degree from the University of

Chicago; Susan Blakey, who has had charge of the work at the University of Colorado and comes to us this fall as assistant professor.

The University of Cincinnati is offering a new course dealing with the problems of sex education that includes a study of the function of the home and other social institutions.

Although especially and primarily intended for teachers, the course is also open to other groups, such as advanced students, social workers, ministers, leaders of boys' and girls' clubs, persons preparing for Y. M. C. A. and Y. W. C. A. positions, recreation leaders, and leaders of parent-teachers' groups and mothers' clubs.

The University of Maryland offers this year a two-year course in addition to the regular four-year course in home economics.

Applicants for this course must be graduates of an approved high school. Upon completion of the required work they will be granted a special diploma and will be eligible to receive a teacher's certificate from the State Department of Education, entitling the holder to teach home economics in the high schools of the state.

Edna McNaughton, Professor of Home Economics Education, is in charge of the new course.

A Home Economics School has been established at Campden, Gloucestershire, England, by the Ministry of Agriculture, for teaching students and housewives how to preserve vegetables and fruits. Canning, drying, crystalizing, and jam, jelly and marmalade making are included, as well as methods of brining and pickling and the manufacture of pickles, sauces, chutneys, and fruit sirups and liqueurs. Two courses are offered: one for homemakers and one for commercial purposes; the former lasts two weeks, the student being required to select the processes in which instruction is desired. A charge of £2 10s. (\$12.50) is

made for tuition and materials. A syllabus has been prepared for a teachers' course, which deals with the processes of fermentation, decomposition, partial and complete sterilization, pasteurization, refrigeration, and other similar questions.

NOTES

Edith M. Thomas has recently been appointed State Supervisor of Home Economics in North Carolina to succeed Edith Coith who is now Mrs. George Atkinson of Salisbury, N. C.

Florence Powdermaker has resigned from her position in the School of Hygiene, Johns Hopkins University, to become Specialist in Nutrition for the State of New Jersey.

The U. S. Civil Service Commission will hold a competitive examination for domestic science teachers for the Indian Service on Nov. 17 and Dec. 15, 1920. For further information write to the U. S. Civil Service Commission, Washington, D. C.

An All-America Conference on Venereal Diseases is to be held in Washington, Dec. 6 to 11, 1920, under the auspices of the U. S. Interdepartmental Social Hygiene Board, the U. S. Public Health Service, the American Red Cross, and the American Social Hygiene Association. The problems of education and of social influences in the control of disease and in relation to marriage will form part of the program.

The Manchester Guardian of Friday, Aug. 13, 1920, reports that the English Ministry of Agriculture, with the approval of the Treasury, has appointed Dame Meriel Talbot, D. B. E., to be Woman Adviser to the Ministry. The object of this appointment is that the fullest use may be made of women's experience, interest, and work in the agricultural and rural life of the country.

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THE FOOD OF THE IMMIGRANT IN RELATION TO HEALTH¹

MICHAEL M. DAVIS, JR. AND BERTHA M. WOOD

The Boston Dispensary

DIETARY BACKGROUNDS

Most of our friends from other countries come to America in the very cheapest way, and are unaccustomed to travel. They leave home with many of their cooking utensils in a cloth bag and continue their house-keeping on shipboard in the steerage, feeding their children and themselves from stores brought from home. Almost their first thought on landing is something to eat, and this fact places food in the first rank of importance in our plans for Americanization. Their first impression of America is often gotten in a poorly housed restaurant, whose proprietor is of their nationality. From him they learn where to get some of their native foods, both raw and cooked.

Usually they establish their homes in neighborhoods or colonies of their own country people. Here there is no opportunity to know about American foods, raw or in combination, or the kind and amount of foods needed in a day's dietary under the new living conditions. Even they

¹ This material in somewhat altered form will appear as part of a book on Immigrant Health and the Community, to be published shortly by Harper & Brothers, New York, as part of the Americanization Series. It is printed in the JOURNAL by permission of Harper & Brothers. Chapters on the diet of the Poles, the Italians, and the Jews will follow in succeeding numbers of the JOURNAL.

The series represents but a part of the material collected by Miss Wood in connection with the study made. The entire result of the study will appear in book form at an early date with the addition of the following racial groups: Hungarians, Portuguese and Mexicans.

come from countries in which the climate is very different from this, they make no change in diet; or if their occupation here is more strenuous or less so, they do not take this into consideration. They have always eaten certain kinds of foods prepared in certain ways. Why change? There is no one to tell them; no one to show them which of theirs to keep, and which of this country's to adopt nor how to prepare them. They are probably more willing on their arrival than they will be at any later time to accept American help and suggestions.

Their housing conditions are changed, their style of clothing must be changed; many of their social customs, as well as some of their religious ideals, must be given up; the only habit and custom which can be preserved in its entirety is their diet. This is made possible because they find in America, as in no other country, all their native raw food materials.

All human beings are naturally gifted with more or less ability to prepare food for themselves when occasion requires. This aptitude does not necessarily help them to adjust their diet to new conditions. They are willing to learn, but who will teach them? Who knows their foods?² How many and which ones shall they continue to use to meet their daily needs and new financial condition and responsibilities? Where shall they buy them? Even the cooking dishes are of a different type from those which they have used. Which kind produces the familiar results?

There is much that we may learn from these people with profit, and equally much for them to learn from us. If we then study their ways and customs and acquaint ourselves more and more with their foods, we shall be better able to help these foreign-born to adjust themselves to new conditions with as few changes as possible.

During the influenza epidemic of 1918 it was plainly demonstrated that neither district nurses, settlement workers, nor visiting dietitians knew much about the foods of the foreign-born patients. Gallons of American soups and broths were served to these people only to be untouched and thrown out. This was at a time when diet might have meant much in furnishing resistance to the disease. In our hospitals and dispensaries we usually find only American foods prescribed for diets. Often it has been said, "They should learn to eat American foods if they are to live here." We may not all agree with this, but at least we

² A search of the literature of the Dietetics of Foreign Peoples of the United States was made for this Study by Miss Margery M. Smith of the Department of Home Economics, Simmons College. The text citations and footnotes to these chapters include all she found. Its meagerness is apparent.

will agree that when a person is ill and needs a special diet, it is no time to teach him to eat new foods. It is like hitting a person when he is down. Our milk soups are nutritious but so are theirs; why not learn what they are and prescribe them? The same is true of other foods.

It is much easier for the dietitian to learn the foods of the foreign-born than for these people to adjust their finances to a new dietary. Often their income is insufficient to buy their own foods which they know they like. Can we wonder that they hesitate to invest in food about which they are uncertain?

A Bohemian family of father, mother, and six children, who were patients at a dispensary, were living (or staying) here on an income of twelve to sixteen dollars a week. It was necessary to get milk and cereals into the diet of the children, but who, without a knowledge of Bohemian foods, dare disturb that very limited amount available for food?

Mrs. Angelo's husband is a printer, who earns seventeen dollars a week. They have seven children, the oldest a boy of eleven. Barbara, five years old, was very bowlegged and had to have her legs broken to straighten them. Three younger children were sent to a dispensary food clinic for diet to prevent their being bowlegged. It was necessary to have not less than two and one-half quarts of milk added to their food each day. The income was too small to allow for this, so the man got extra work at night to pay for the milk. This shows that they were willing to go at least half way in changing diet habits. There are certain diseases prevalent among the foreign-born people, due largely to their change of diet. When the diet is corrected the disease may be overcome.

In the four chapters which follow a brief account is given, for each of four important race groups, of the conditions and dietary habits of the people in their own country, and of their food problems here, with some changes needed for health. Special reference is made to a few diseases in which diet is a factor and which are most frequently noted among the group by physicians, nurses, and social workers.

Diets, for these diseases, and recipes are given for each nationality. These recipes use our American raw materials and many of the dishes made from them resemble ours so closely that only slight changes are necessary in the rules to produce a welcome diet for these people.

A dietitian has never been so honored, in college or out, as she will be by these foreign-born people when once she talks to them of their familiar foods. An Armenian storekeeper found a fellow countryman, a chef in an Armenian restaurant, who was suffering from indigestion. He said

to him, "You come with me. I take you to the smartest woman you ever knew. She knows our foods, she tell you what to eat, you feel better."

THE NEAR EAST (ARMENIANS, SYRIANS, TURKS, AND GREEKS)

These interesting peoples, with their love for friend and neighbor, producers of works of art, dwellers in God's out-of-doors, taking shelter only when occasion demands, have much to give to any country.³

Most of those who come to America have lived in the open country among the foothills of the mountains or on the high table-lands. A minority dwelt in the smaller cities.

Early in March, in the home country, the families change their mode of living from indoors to out in the open. This is the season for plowing and planting; meals are prepared and eaten out-of-doors and the evenings are spent under the great canopy of blue and gold, with all the family and relatives telling the news of the day or exchanging stories. Some of these stories have been related many times before, but their familiarity makes them even more interesting. These people practically live out-of-doors until late in November, working in the fields or harvesting their supplies. Then they change their occupations to different lines of craft work. Many of their most interesting pieces of copper and brass are tooled and etched during the winter months. Some of their wonderfully beautiful rugs are woven then. A pleasant pastime for the older women is the dyeing of the yarn from the vegetables gathered, a little of this color and a little of that color being mixed to get just the shade desired to harmonize with the one artistic design in the mind of the weaver. It is difficult to distinguish between work and recreation among these people. So much of life is beauty to them.

During the farming season they raise sheep for food and clothing; goats and cows for milk, butter, and cheese; chickens, ducks, and geese for eggs; and grains, vegetables, fruits, and berries in abundance. Their wheat is thrashed in the fall, then taken to the one neighborhood caldron where it is boiled "until all germs are killed," then spread out on great sheets of cloth to dry in the sun. After it has dried, it is ground between two great stones to different degrees of fineness, according to its future

³ Comparison at some points in this chapter may be made with the Mexicans, whose dietary problems deserve special study. See "Dietary Studies of Mexican Families in New Mexico." (Office of Experiment Stations Bulletin 40, 1897.)

use, then stored for winter or until next harvest. This grain is used in many different ways; it is even burned as incense.

Olives, both ripe and green, are pickled and some are salted. Wines and raisins are made from grapes and the leaves of the grape vines are salted to be used later in wrapping dolmas. Figs and dates are preserved in sugar with other fruits. Potatoes, squashes, onions, garlic, and other vegetables are put in pits in the ground, and at least three lambs are salted. In the Orient lamb is the principal meat used. Rice has a large share in the daily menu. The use of nuts with rice and meat adds an attractiveness to the diet. "Pine-cone seeds" or fustuck, hazel nuts or fanducks, chestnuts or kestanch, pistachio nuts and coriander seeds are many of the seeds referred to in Oriental recipes; cardamon seeds are frequently added to coffee.

Chick peas or nohond, a product of Greece and Turkey, and fava, pakla, or horse beans are two of the leguminous plants of high food value. There are various wheat preparations in which the grain appears in different forms.

In Eastern cookery not a single dish is dependent on the extravagant use of expensive and various ingredients which, when counted up, make food very expensive, but is dependent, and very much so, on the flavor of each different article used in the making. Oriental food is not highly spiced or flavored, but is a very fat diet. Butter is not eaten on bread, the fat in the food preparations being sufficient. The breakfast of these Easterners consists of black coffee and bread for the adult, and goat's milk and bread for the children. In some families cracked wheat is used as a cereal boiled with milk.

The noon meal may be matzoun or curdled milk, with a "dressing" of pilaf. Matzoun or yoghourt is the famous beverage or soup of the Orient. It is served either hot or cold or sweetened with sugar. It is as valuable in their diet as buttermilk in ours.

For the dinner or evening meal, shish kibab, lamb cut in walnut sized pieces and roasted on skewers, is a favorite form of serving meat. All vegetables are first fried in a small amount of olive oil or other fat, then boiled in meat stock. Sometimes tomato is added to give more flavor. Okra is never slimy and vegetables lose their "green" taste when first cooked in oil or other fat.

When these people settle in America, their dietary customs are continued to a large extent, but milk becomes a luxury and fruit is not so plentiful. The amount of milk used when there are children is gener-

ally insufficient because of the expense. It is rarely if ever bought in their home countries, and when it is the cost is only a few cents.

A Syrian woman who had tubercular glands was advised to use one quart of milk a day. After being treated for some time, she showed no improvement, and it was discovered that she had not had the milk. When questioned why she did not take it she said, "The milk come in a bottle—I get it from the goat in my country. The doctor ordered milk and I do not know what else is in the bottle; there must be something besides milk to make it cost so much." After all was explained and milk ordered for the patient for a month, she began to improve, and then she was convinced that although we have an expensive way of obtaining it milk has the same virtue as in her own country.

Wheat is used extensively, either whole or cracked, cooked in water until nearly done; then milk is added for the last few minutes' cooking. It was interesting to find during the war that these people were still able to secure wheat in its different degrees of coarseness. Even the candy, or sweetmeats, called "Medley" is made with wheat in it.

Many of our finest fruit stores are owned by Greeks, Armenians, or Syrians. The men are seldom laborers; almost all choose commercial occupations, usually starting with a push cart of fruit, frequently bananas, and gradually working up a trade, buying a horse and wagon, then establishing a small store. Others are waiters in restaurants or have shoe-blackening stands. Some sell antique rugs, and clean and repair them.

In the majority of these homes the men return for the mid-day meal. There are comparatively few Eastern women over here. Often an Easterner and his wife run a restaurant and board a number of men. Sometimes a bulletin board is hung in these places upon which letters received from folks at home are posted for others besides the recipient to read. Eating at these restaurants is a very social occasion; the food is well cooked, although the service lacks some of the conventionalities of this country.

Because of the indoor occupations of these people their incomes are more regular than the incomes of those who are laborers, or do other seasonal work.

While among the Syrians, Armenians, Greeks, and Turks, we usually find the children well nourished, with plenty of growth material and mineral matter in their diets, milk is not given in as large quantities as it should be and fruit is also found by them to be expensive. The under-nourished children especially need more milk in their diet.

A Greek boy was a patient at a dispensary and referred to a Food Clinic for a constipation diet. When questioned about the delicious orange compote the Greeks usually have two or three times a day on their tables in Greece, he said, "O yes! My mother makes it but she keeps it for company. When she is out I crawl in the window and eat some on my bread. Oranges cost a lot for boys, my mother says."

Fruits prescribed may be dried ones as well as fresh, but should be given as compotes, not "stewed" fruits.

The green leaved vegetables are not used in cream soups, but are cooked in stock. This must be remembered in planning diets for children. When vegetables are prescribed, it is well to remember that the Oriental cooks them with olive oil. They are known as basdis and are used extensively with meat, or cooked in olive oil, or both. One of the best dishes for a patient with constipation is cabbage with meat—Lohano Basidi-Kelom.

Nephritis seems almost unknown among these people. A patient may have any of their cereal dishes made of wheat or rice and any of their green vegetables cooked in olive oil.

Because of the large amount of rice and wheat used in the preparation of the Oriental foods it is difficult to give a diet list for a diabetic patient. In prescribing noncarbohydrate vegetables cooked in olive oil, and lamb and chicken cooked on skewers, one is able to feel sure no rice or wheat is used.

The tuberculosis patient needs milk added to the diet to be used instead of black coffee.

Tzouvatzegh, the Armenian egg milk toast, is very good. Another common milk dish is bread buttered and served with a pitcher of hot milk. This is eaten as we eat bread and milk.

The national dish of the Turks is "Pilaf," of the Armenians "Herissa." Both are good foods for the children.

The Near-East's knowledge of food combinations and possibilities seems greater than that of any other peoples. It is generally supposed that their cookery is spicy, but it will be noticed, in looking over their recipes, that the cooking is rich because of the number of ingredients and not because of the use of condiments.

TEACHING AMERICAN TABLE SERVICE TO AMERICANS

S. DEBORAH HAINES

Professor of Foods and Cookery, Oklahoma College for Women

Some phases of home economics teaching have not been thoroughly Americanized. Meal serving has been taught in the past using very largely the English and Russian service, such as are in vogue in the best hotels in those countries, as the pattern. There the servant plays an important rôle. Too little time has been spent upon teaching home table service where there is no attendant. Such service is used in many of the best homes of our country. Let us call it by its right name—American Table Service.

The domestic service problem has a distinct bearing upon the form of table service used in the American home today. Since eighty to ninety-five per cent of our homes today have no outside help, it is pertinent to ask if home economics teachers should hold up, as ideal, the home having one or more household employees. In teaching foreign service chiefly we are consciously or unconsciously doing so. The pecuniary and ethical gains from having no employee in the home, though many, need not be discussed. The outstanding fact is that the great majority of families either do not want or cannot get such assistance. The practice house, as it is being conducted in so many schools throughout the United States, is meeting this condition in a practical way. Here, among many other things, the students are preparing and serving meals, under conditions quite similar to those in their own homes. Is this not a worthy ideal to hold before students? As a general educational policy, it is agreed that learning must be based upon the processes which will function in the student's life now and which connect with the situation in which the student has been and will be living. It follows that, although it is proper for students to have an understanding of foreign table service, it is more important to understand how to prepare and serve a meal oneself, and at the same time play the part of hostess at the table.

What is the teacher's part in this kind of a plan? When she taught foreign service, she usually gave rules for the particular service used; she may have ordered the supplies and announced the menu to be served. Sometimes instead of simplifying the meal by lessening the number of dishes served, she tried to multiply them in order to have enough work to keep the entire class busy. In teaching American table

service she will divide the class into groups of not more than eight, so that conditions will be more like those of a family. There will be plenty of duties to keep all occupied, since the time is proportionately shorter for a large group. When several groups are working in the same laboratory, each group preparing a meal, a comparison of results is helpful.

As teachers of home economics, we too often think that the student will acquire the easy way of doing things well after finishing school, and we spend our time teaching the difficult way of doing elaborate and often unnecessary things. What practical suggestions or general principles should the teacher give to the cookery class that will help the students meet actual home problems? A partial outline follows:

Menu making. The number of different kinds of food should be fewer than are often served, and the one-dish meal (nevertheless a balanced ration) should be more studied and used.

Frequently two or three green vegetables are served at the same time. This robs the following meals of variety and makes extra work. An extra serving of the same dish gives equally good results. The same, in general, is true of starchy foods.

The nutritional requirements, and not the individual eccentricities, should be studied.

The number of courses served should be smaller, usually not more than two.

Convenience in the home. Houses should be planned so that meals may be served near the place in which they are prepared. The breakfast room with its printed doilies has come to stay and is rightly used for other meals besides breakfast.

The wheeled tray helps when serving must be done less conveniently to the kitchen. It is also a convenience in changing plates. Soup dishes may be removed to the tray before the second course.

Waiting upon the table. A large amount of waiting upon the table may be eliminated by forethought in laying the table, and in planning the menu. Whatever is needed should be provided as quietly and as inconspicuously as possible.

Hospitality. The feeling of mutual responsibility in the family group for the success of the meal is one of the tests of an ideal family. This feeling is the foundation upon which American table service fails or rises to its perfection. Hospitality is the natural outgrowth of sharing family responsibility. Greater simplicity when entertaining will make it possible to have guests more frequently.

What should be the duties of the class if they are studying American table service? When studying English or Russian service, the class was taught how to place and remove dishes; emphasis was upon serving. In American service, the emphasis shifts to good management which, in the last degree, means the minimum amount of waiting upon the table, because the unity of the group is preserved when there is little interruption. What is to be prepared, how it is to be served, and how much it will cost, are the perplexing questions which sometimes kept the teacher awake at night, prior to lessons on meal service Russian or English style. When teaching American service the class does the planning instead of the teacher, for, after all, is not the planning the real problem? The class are told how much they may spend upon a given meal. After consulting the supplies on hand, they make out their market order and send a committee marketing if necessary. They prepare as well as serve the meal and they grade their work.

The following tentative plan has been found helpful in judging results, letting the individual class decide upon the detail of percentages awarded:

A. Food—40 per cent.

Was the food attractive? In taste? In seasoning?

Was the food ready to serve at the appointed time?

Was the food served at its best?

Were there few enough dishes so that one person could prepare them for a regular meal?

How long a time was involved in the total preparation?

Were the physical needs of different members of the group considered?

What was the total cost?

B. Service—25 per cent

Was the table attractive?

Was anything forgotten that should have been placed upon the table?

Did all the members of the group contribute to the success of the meal?

Was the meal served with dispatch yet without hurry?

C. Atmosphere and hospitality—20 per cent

Was happiness evident?

Was the meal eaten in a proper manner? Was there table etiquette? Poise? Unhurried eating? Real conversation?

Were the needs of the guests and others foreseen and supplied by members of the group?

D. Final disposition—15 per cent

How long did it take to clean and put equipment in order?

What and how much was wasted?

What duties were neglected?

Since it is our aim to train girls to be good managers in the future, should we not use the opportunity to give practical experience in management now? When this type of table service is taught, there will be more time to study nutritional requirements. Laying the covers and placing the food on the table will be done with equal nicety. And hospitality, the glory of America, will grow, because the homemakers understand ordering the day's work.

THE PUBLICITY WORK OF THE DEPARTMENT OF AGRICULTURE IN RELATION TO HOME ECONOMICS¹

HARLAN SMITH

In Charge of Information, United States Department of Agriculture

I take it that the thing you are most interested in tonight, the thing you came to this session to get, is some practical working knowledge of how you can better carry out your publicity obligation to the people whom you serve. And it is an obligation. I wonder if you feel that way about it. I wonder if you feel that your work is finished after you have developed some new results of research in home economics, or after you have gathered information about better household practices in a survey, say. I wonder if you feel that there is nothing more for you to do after you have written a report of your work in a letter or in a bulletin. Real publicity about the work you are doing begins just about where you think your work is ended. The bulletin or report does not dismiss the publicity obligation. It forms a part of the basis for publicity. That is all.

¹ Presented at the Thirteenth Annual Meeting of the American Home Economics Association, Colorado Springs, June, 1920.

How many people have an opportunity to read the bulletins you publish? The number of copies printed in the initial editions of Farmers' Bulletins in the Department of Agriculture is 30,000. Suppose there is a bulletin on some home economics subject and that every one of the 30,000 copies is well placed in the hands of some woman who can use it. What are 30,000 copies among 25,000,000 women? That means one copy for every 800 women. I presume the editions of your state bulletins are larger in comparison, but you can see how inadequately the field is covered, even assuming that every woman who gets a bulletin reads it. And I think that is assuming a good deal, judging from the appearance and contents of some of the bulletins on home economics that come to my desk.

You have heard it said many times before, perhaps, but I say it again, that most of the bulletins written for popular consumption shoot above the heads of eighty per cent of the people for whom they are intended. I wonder why it is that when most of you sit down to write a bulletin you forget all about your popular audience—your readers. The next time you try it put an imaginary group of every-day women out in front of you and write as if you were talking to them, as if you were giving a demonstration to them. I have seen few bulletins in as simple language as most of you use in talking to groups of women, and yet the bulletin language should be simpler because it lacks the advantages of personal expression and accent.

Not long ago a manuscript for a Farmers' Bulletin came in to the editorial office of the Department of Agriculture from one of the bureaus. It had been passed by the bureau editor and the bureau chief as a fit publication for farmers. The Department editor could not understand much of it so he went to the writer of the bulletin to find out how it happened. He wanted to find out through what mental processes the author traveled in divesting himself of all the things the editor found in the manuscript. He said to the author: "You wrote this for farmers?" The author replied: "Certainly, that is a Farmers' Bulletin, it says so on the manuscript." "I know it was written *for* farmers," the editor said, "but it doesn't seem to have been written *to* farmers. I don't think you would write any of these things in a letter to a farmer or that you would say them to a farmer in conversation. I wonder if you wouldn't tell me frankly whom you had in mind, whom you thought about while you were writing it." And the author replied: "Well, to tell the truth about it, I had in mind Richard T. Ely and Frank W.

Taussig"—and he named several other economists. He saw economists looking over his shoulder instead of farmers.

I realize the great work that is being done to carry your results and good practices to housewives through the home demonstration forces and I am not belittling the value of bulletins. But the press and other publicity channels offer such bigger opportunities for reaching more people that I hope you will give more attention to the possibilities that lie there. For instance, if we send out a story, based on a Farmers' Bulletin which has an initial distribution of 30,000 copies, in our Special Information Service, we get a circulation of approximately 15,000,000 readers. And that is only one of the channels in which we could put the story.

Your obligation, then, I think, is to work intimately with the people who can help you take advantage of the assistance of the press—the people who are handling publicity in the various institutions where you work. Most of the states have such publicity offices. Where they are not available you may then consider how you can learn to do some of the work yourselves. But I hope you will work closely and sympathetically with these offices established for the purpose. Don't get the notion that people doing publicity work are queer. You may yourself be queer to them. It is very likely that they know their business or they wouldn't stay on the job very long. And that business is to get stuff printed in newspapers, among other things. It is very likely that these people know more about that business than you do; that they know what newspapers want and that if you want to use the newspaper as a means of communication with people you must give the editors what they want, not what you think they ought to have. If you give them what they want, it will be printed in their pages. If you give them what you think they ought to have, it is likely to get nowhere except in the waste basket.

Of course, if you have not the help of a publicity worker, then you may well consider how you can train yourself to do some of this work yourself. I am not going to tell you that anybody can learn to write successfully for the newspapers. In the first place I don't believe it is true and if I did I would not be likely to say so in this public way because it would be unprofessional. There are a lot of us that have to make our living at this business. And the competition is already keen.

But I am quite willing to admit that there are a lot of people who, with a little training, can write copy that is acceptable to newspapers and thereby increase the effectiveness of their work. I know of no bet-

ter way in which people in the work you are doing can so broaden their field of usefulness and extend their services than by preparing themselves, at the expense of a little effort, to talk directly to the people they serve, through the press.

I want to tell you now about the press services we are carrying on through the Office of Information of the Department of Agriculture. The Office of Information, first of all, is a service bureau to the press. It is the point of contact between the Department of Agriculture and agricultural and trade journals, newspapers, magazines, the press associations, Washington correspondents, and other writers. All press material about the work of the Department clears through the Office of Information. A number of regular informational services to the press are issued, but the office also helps outside writers to develop stories about the Department's work; it searches the Department for photographs, maps, and charts to meet particular needs; and it obtains on request from editors special articles from the Department's investigators and scientists, so far as facilities permit the writing of them.

The regular informational services of the Department are as follows:

Weekly News Letter. This journal, the official publication of the Department, serves a two-fold purpose. It is a news service in that it carries official statements by the Secretary and by the various bureaus of the Department, and stories reporting the progress and results of Department investigations. It is a house organ for the Department's large staff of employees and official coöperators. It strives to keep them informed of new work begun, the progress of various campaigns, and to present ideas that will help them in their work. It is our purpose to print in the *Weekly News Letter* only such matter as is of wide interest and while we try to prepare most of the items in a form suitable for publication, it is realized that the chief value to editors of certain articles is to present the Department's views on various subjects and to provide information for such use as the editor sees fit to make of it. Frequently we carry special departments on the work of the Department of interest to women and in support of the boys' and girls' club work. We are always very glad to give space to tell about experiences of communities or individuals whose methods could be employed elsewhere.

The *Weekly News Letter* is sent free only to employees, official coöperators, and the press. It can be obtained, however, from the Superintendent of Documents, Government Printing Office, at the subscription rate of 50 cents a year. Its total circulation is 142,000.

Special Information Service. This is an illustrated weekly syndicate of eight columns for daily newspapers. It is issued as a proof sheet several days in advance of its release, and it is made up of four departments of two columns each, as follows: "Growing Food on the Farm, In the Yard;" "Agriculture's Other Half—Marketing;" "A Bird in the Hand" (poultry); and "The Housewife and Her Business." Cuts, mats, and photographic prints of the illustrations were lent for the use of newspapers until a year ago, when reduced funds made it necessary to discontinue the cut and mat service. Only photographic prints of the illustrations are available now. This service is sent to 3200 daily and weekly newspapers that have asked to receive it.

Food and Farming Weekly. This is a press clipping sheet released every Monday. It carries eight to twelve short stories of results and progress of the Department's work, including results of investigations or research bearing on women's problems. It is a running account week by week of what the Department of Agriculture is doing. This service attempts to meet the requirements of editors for brevity, telling its stories in the fewest words possible. It is sent to 5200 publications of all classes that have requested it.

Home-Garden and Canning-Drying Series. To stimulate home gardening and home preserving of foods, seasonal articles on these subjects are issued as a series to newspapers. They are made up of short "how-to-do-it" items and stories of successful experiences that contain helpful ideas. Until this year, cuts, mats, and photographic prints of the illustrations used in the service have been furnished to newspapers, and the articles grouped on printed proof sheets in suggested layouts with illustrations. Because of a reduction in our printing funds, no illustrations could be used in these services this year, and they are being issued in mimeograph form. Four hundred daily newspapers asked for the service this year. Last year, when cuts and mats were lent, 1241 newspapers asked for it.

Plate Service. One of the ways in which the office makes contact with the weekly and small daily newspapers in the country is through the plate and readyprint service of the Western Newspaper Union. Twenty to twenty-five columns of matter with illustrations are furnished to this concern weekly. In 1918 more than 62,000 columns of agricultural material, practically all of it furnished by this Department, were distributed by the Western Newspaper Union. The Department's part in this form of distribution is only in furnishing the material. The plate and readyprint matter is sold at a nominal price.

Mimeograph Service. News matter requiring immediate distribution is issued in mimeograph and sent generally or locally, according to its applicability and interest. By this means the office supplies its "spot" news to press associations, Washington correspondents, agricultural journals, trade journals, and newspapers.

Special Articles. The Department is glad to furnish on request special articles by its writers or specialists. Obviously it can not offer an unlimited service in this respect because men and women in scientific and investigational work who are called upon for articles frequently are in the field or are engaged upon other duties requiring their full time for the moment.

Other Activities. Other activities of the Office of Information include the preparation of posters and circulars for use in support of the various educational campaigns carried on by the Department.

The Office of Information has shown the value of conducting publicity campaigns in the field. It was found that local or regional campaigns in which the Department was interested in many cases required local or regional publicity. The office sent its representatives into the field to meet editors personally and "sell" them an idea, and to gather first-hand information—local interest stories and stories of individual experience having ideas worth telling elsewhere. The tick eradication campaign in the South has been greatly aided by field work of this sort.

The Office is placing an increasing amount of material in the magazines. In recent months special articles prepared by its writers have been accepted by such magazines as *The Saturday Evening Post*, *Collier's*, *The Outlook*, *The Ladies' Home Journal*, *Pictorial Review*, *The Delineator*, *Scientific American*, *Popular Science Monthly*, *Popular Mechanics*, *Literary Digest*, and *Leslie's*. We are endeavoring to work this field not only in preparing articles ourselves, but by "selling" ideas for stories to editors and inducing them to assign their writers to the subjects. As our force of writers is small, and the time which they have for preparing magazine articles is limited, we are making greater use of the alternative method of inducing editors to have articles written by staff writers with our assistance.

Distribution of Press Material. Every effort is made to give the wisest possible distribution to our press material so as to place it only where it will be of interest and to avoid waste. With the regular informational services of the office the policy has been adopted of sending them only to publications that request them. The only exception to this is the

Weekly News Letter, which is sent to nearly all publications. We have, however, queried the daily newspapers and are sending the News Letter only to some 800 that ordered it. Effort is made through form letters to induce editors to ask for these services, but no publication is listed without the specific request.

I think you should know something about the printing situation in the Department of Agriculture. I think this Association should know why the Department is not able to meet its obligations to the people of this country in getting out information though millions of dollars are spent every year in gathering it. I think you ought to know because I believe as an association you can be of help in remedying a serious situation. The funds for printing allowed the Department are wholly inadequate. The Congress appropriates some \$30,000,000 a year for the investigations and other work of the Department and then does not provide sufficient money to carry the results of that work to the people. As a result, the Department has a large number of useful manuscripts on hand which it cannot publish. One reason for that lies in the fact that the printing appropriation is handled not by the agricultural committees of the two Houses of Congress, which pass on our other appropriations, but by a subcommittee of the House Committee on Appropriations. That committee, of course, is not familiar with the work of the Department—its chief concern is to keep down expenses. The printing funds have not kept pace with the amount of money appropriated for the various other activities of the Department. We needed \$225,000 last spring to publish the manuscripts then on hand, but economy at all costs was the slogan in Washington this year and so we cut down our estimates for \$225,000 to \$125,000, planning to establish a priority list among the 267 of our manuscripts then awaiting publication at the Government Printing Office. We got \$75,000 after a good deal of effort.

Some of these 267 manuscripts represent the life work of scientists. Some of them cover investigations made at considerable expenditure of money. Most of them bear on subjects about which there is immediate need for information. Farmers and business men demand the results of investigations. They know the studies are completed and they wonder why they can not have the results. They blame the Department for inefficiency. The situation is a very embarrassing one to the Department. The Office of Home Economics, for example, has manuscripts that it has been holding for ten years waiting for an opportunity to print. Not only that, but we have not money enough to reprint the old bulletins of that office which are still in demand.

I understand that this Association has a committee on legislation. I hope it may see in this an opportunity to help, for I believe it could be of considerable assistance. I am not prepared to say how, but I believe it can find a way. Do you know I would be violating the law if I should stand here and urge this Association or any individual to write to his Congressman about this matter? If I should write a letter on official stationery about it, if I should do anything directly or indirectly or any other way—the law is ironclad—I would be violating the law. All I can do is to give you the information about the situation.

I think the Association would be interested in knowing also—and many of you do know already—how severely the Department's appropriations for other activities have been reduced for next year. In the face of increased costs for carrying on our work, and in the face of the need for new work on new and vital problems in the field of agriculture, we will have \$2,185,000 less next year than we had this year. You will be concerned to know that more than 60 major activities of the Department must be abandoned or curtailed, including the work to encourage the keeping of family milk cows. You know one farm in six in the United States has no milk cows.

Appropriations for enforcing the Food and Drugs Act were reduced by \$30,000, and yet the administration of the act is mandatory. Does not this interest you? It means that adulterated products, both imported and home manufactured, will find easier access to the tables of the Nation. Appropriations for investigating the handling and transportation of poultry, eggs, and fish were reduced by \$10,000. Those are only a few of the items. A bare summary of them made 7 pages. A Texas editor complained when he received a copy of the summary. He said it was too long and we ought to know better than to send out such lengthy statements when paper is scarce and space in newspapers at a premium. I replied that the responsibility for its length was not ours and that he could guess whose it was. I told him we were giving the information in the briefest form.

THE PRESENT STATUS OF THE HOME ECONOMICS
AMENDMENT TO THE VOCATIONAL
EDUCATION BILL

LOUISE STANLEY

Chairman, Legislative Committee, A. H. E. A.

Many inquiries have come to the Chairman of the Legislative Committee as to the present status of the Home Economics Amendment to the Vocational Education Bill, generally known as the Fess Bill.¹

This bill was introduced into the House January 26, 1920, by Representative Fess, chairman of the Education Committee, was read twice and referred to the Education Committee. In general, the members of this committee seemed favorable to this bill, but the calendar was so full during the last session that it did not seem wise to report the bill out at that time. For this reason we were asked last spring to stop sending letters to the members of the Education Committee. At no time has the legislative chairman asked that all work on this bill be stopped, but urged that, during the recess, pressure be brought to bear on the state representatives to assure a favorable vote when the measure came on the floor.

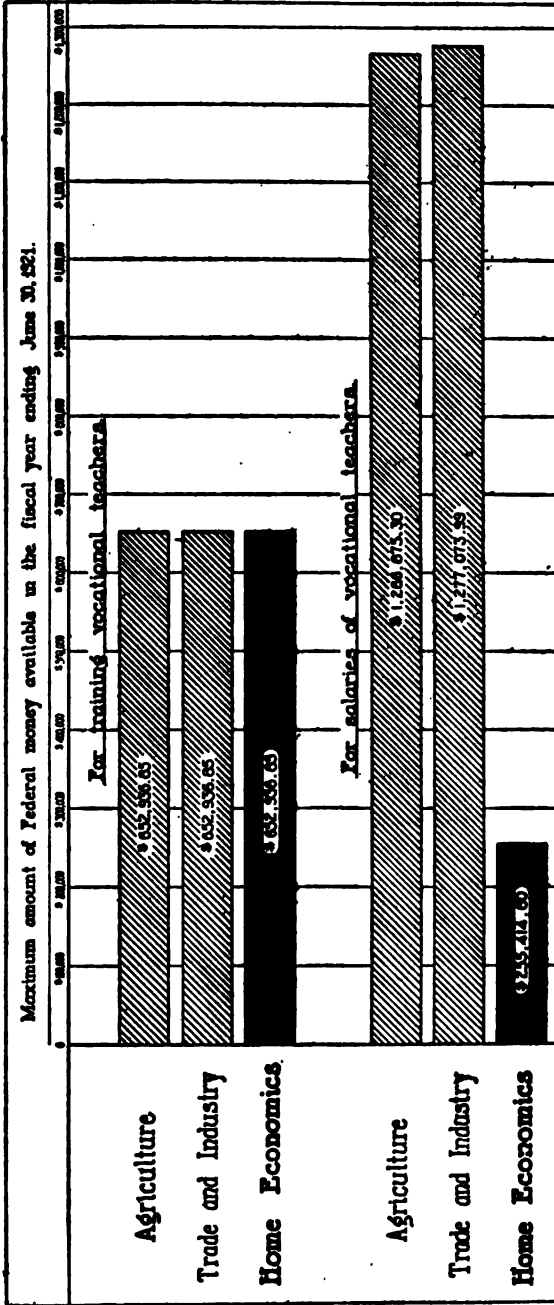
The Fess Bill was proposed at the request of the American Home Economics Association. It is *our bill*, the first bill introduced into the National Congress at our request. As president of the Association, Miss White was untiring in her efforts for this bill and we are assured of the equally hearty support of Miss Sweeny. The desirability of additional appropriation for vocational home economics has been endorsed by the following national organizations, in addition to the American Home Economics Association: General Federation of Women's Clubs, National League of Women Voters, National Society for Vocational Education, National Grange, National Council of Administrative Women, and National Congress of Mothers and Parent Teachers' Associations, besides numerous state organizations.

Especial attention should be called to the work of the League of Women Voters for this bill. Due to their efforts, clauses advocating additional appropriations for vocational home economics were written in three of the party platforms. Unless the writer is mistaken, this is the

¹ The Fess Bill is H. R. 12078 and is a bill "amending the Smith-Hughes act by adding sections appropriating, for vocational home economics, sums equal to those appropriated for agriculture and trade and industrial education and regulating their expenditure."

Vocational Education — Home Economics.

Comparison of Federal funds available for teacher training and for paying salaries of teachers



Amount available for salaries of teachers per \$100.00 available for teacher training—

Agriculture **\$1,940.27**
Trade and Industry **\$1,955.89**
Home Economics **\$ 391.18**

Vocational Education - Home Economics

Constitutionally
Adapted

Gainfully
Trade.

Women

The years of age and over, not engaged in any trade or profession is 20

Maximum amount of
Agriculture

Maximum amount available for
Trade and Industry

Maximum amount available for
Home Economics

Maximum amount of Federal money available for
Home Economics education in 1920 - '21

Per capita of women and girls in
the home in 1910 -

Less than 1 cent

1 1/4 cents

The following table indicates the funds that will be available for vocational home economics under the new bills, as compared with the amount available under the Smith-Hughes Act as it now stands:

Amounts available

FISCAL YEAR ENDING JUNE 30	UNDER SMITH-HUGHES ACT	UNDER THE KERNON BILL*†	UNDER THE FERR BILL*†
1921	\$255,600		
1922	305,000	\$200 010	\$500,000
1923	354,400	350,000	750,000
1924	403,800	500,000	1,000,000
1925	511,200	650,000	1,250,000
1926	610,000	800,000	1,500,000
1927	610,000	950,000	1,750,000
1928	610,000	1,100,000	2,000,000
1929	610,000	1,250,000	2,250,000
1930	610,000	1,400,000	2,500,000
1931	610,000	1,550,000	3,000,000
1932	610,000	500,000	3,000,000

* With certain additional amounts to guarantee the minimum for each state.

† Since the bill was not passed June 30, 1920, the first appropriation cannot become available before 1921-22; on this account, the maximum is reached in 1932 instead of 1921.

Now, will you not back up the Association and do your part to help secure the passage of this bill as soon as possible?

First, public opinion should be educated in regard to the need for this bill. You can do this through personal interviews, newspaper notices, and discussions before groups, particularly in the Citizenship Schools now being formed by the League of Women Voters.

Second, every Representative and Senator should know that his constituents are back of this bill. Tell them so and write them so, and have others do the same. Have the organizations in your community pass resolutions endorsing the bill and send copies to your Congressmen.

Third, we want to know where every man in the National Congress stands on this bill. Put this question squarely up to your representatives and let the women of your district know how they stand on it.

Fourth, if there is any question in your mind in regard to this bill, or if any question is raised which you cannot answer, will you not write to the president of the American Home Economics Association, or to me as Chairman of the Legislative Committee.

This is the psychological time to pass the bill. Get in touch with your State Legislative Chairman and see where you can best help.

FOR THE HOMEMAKER

GENERAL RULES FOR CHOOSING OVEN TEMPERATURES¹

MINNA C. DENTON

Experimental Kitchen, Office of Home Economics, United States Department of Agriculture

It must be remembered that there is no one method of baking any given product which can be expected to prove invariably superior to all others; there are usually at least two ways of baking it, if not more. Popovers, for instance, are often put into a hot oven (about 400° to 450° F.) which is then reduced in temperature about 50°, or perhaps much more; yet equally delicious popovers can be made by putting them into a cold oven and heating them gradually to a moderate temperature, though in the latter case an hour or more will be required to bake them, instead of 35 minutes as in the first method. Similarly, bread may be allowed to rise until it has somewhat more than doubled its bulk, and then be put into a hot oven (400° F. or a little more), and the temperature subsequently much reduced; or it may be put into a moderate oven (350° to 375° F.), before it has risen quite so much, and allowed to complete the rising process in the oven, while the oven is being heated up to 400° or a little higher, after which the temperature is reduced to complete the baking process. Results are equally good in either case, if the procedure has been properly managed.

Again, the results of the baking operation are not exactly the same in different ovens of varying sizes and construction, even though the thermometer may record the same temperature in every case. A large or heavy oven (coal range or heavy "fireless" gas range) will "roast" a joint or bake a cake or loaf of bread quite as well at a temperature which is at least 50° F. lower than that used when the same work is performed in a smaller, thinner walled, gas range oven through which a blast of hot air is rapidly circulating.

When a range of temperatures is suggested as being suitable for baking any given product, choose the temperatures with the following principles in mind:

¹ Published by permission of the Secretary of Agriculture.

1. The larger sizes of loaves, rolls, muffins, or potatoes usually require lower temperatures for longer periods than the smaller sizes which must have higher temperatures and shorter periods, other things being equal.

2. The shape of the loaf, roll, or roast is also important. A half pound sponge cake or angel food cake baked in a turk's-head pan (center tube) presents a different baking problem from that offered by the same weight of cake baked as an ordinary loaf.

3. The composition of the batter or dough governs the baking temperature to a large extent. A loaf cake comparatively high in flour, baking powder, and liquid and comparatively low in egg, sugar, and fat (i.e., a "cheap" cake) requires greater care and a more gradually applied heat than does a richer cake; it should therefore be put into a cool oven at first, with very gradually rising temperature if the best result is to be obtained.

4. The small portable gas oven (especially if uninsulated) requires somewhat higher temperatures in order to secure the results attained in a larger oven by very moderate temperatures; particularly is this difference apparent when the comparison is made with a large heavy "fireless" or electric or coal range oven, which has very little ventilation or none at all.

Measuring oven temperatures. If the oven is provided with a glass door, one may use a mounted short thermometer² which stands in the oven and is read through the glass panel without opening the door.

In case of a "fireless" oven or other oven provided with heavy door, it is not very convenient, and may indeed prove disastrous, to open the door every few minutes in order to read a thermometer. In such cases it is better to purchase a chemical thermometer³ reading to 600°F. (or about 325°C.). These thermometers have long stems and may be inserted into a cork which is fitted into a drilled opening through the top of the oven. The bulb of the thermometer should be near the center of the oven; or better still, as near as possible to the food being baked, yet without touching any object whatever. The temperature during

² Such a thermometer may be purchased from the Taylor Instrument Company, Rochester, New York; or from The Cooper Oven Thermometer Company, Pequabuck, Connecticut; or from many hardware dealers who carry these and other thermometers.

³ Taylor Instrument Company, Rochester, New York; any firm selling supplies for the use of chemical and physical laboratories. Many hardware dealers carry candy thermometers, and a few even carry oven thermometers. However, the ordinary candy thermometer does not read higher than 300°F., consequently it would break if put into a hot oven.

baking is read on the stem which emerges above the cork. Any hardware dealer can provide a man to drill the hole and fit the cork.

Temperatures appropriate for baking different products

PRODUCT TO BE BAKED	RANGE OF TEMPERATURE OVER WHICH IT MAY BE BAKED
Biscuits, baking powder	400°F. to 500°F.
Bread	350°F. to 450°F. (Begin low and raise temperature rapidly, reducing again; or, begin high and reduce sharply)
Cakes	
Angel food	300°F. to 400 °F., according to size. Or, put a six-egg cake (turk's-head pan) into 400°F. oven; when it begins to brown, turn gas out for 5 to 10 minutes; then raise to 330°F., then at last to 370°F. (These temperatures are approximate and cannot be expected to fit all cases exactly)
Cookies	375°F. to 400°F.
Cup cakes	300°F. to 400°F.
Gingerbread	370°F. to 400°F.
Layer cake	300°F. to 400°F. (Begin low, raise gradually)
Loaf cake	280°F. to 375°F. (Begin low, raise temperature very gradually at first, then more rapidly)
Sponge cake	300°F. to 400°F. (See angel food)
Custard	250°F. to 350°F. (Or, set in pan of hot water, and use 350°F. to 450°F. oven temperature)
Meat, roasted	400°F. to 500°F., then 350°F. to 250°F. (Sear at the highest temperature mentioned or else in heavy kettle or skillet on top of range; reduce sharply and finish at a lower temperature)
Muffins	400°F. to 450°F.
Pastry (no filling)	450°F. to 550°F.
Pies (with uncooked filling)	450°F. to 400°F. (Put into hot oven, lower when it begins to color)
Popovers	450°F. to 350°F.
Potatoes	400°F. to 500°F. (Or at lower temperatures, increasing the time according to the reduction in temperature)
Puddings	350°F. to 400°F. (If high in eggs or milk, bake like custard)
Rolls	400°F. to 450°F.
Soufflé	350°F. to 400°F. (See custard)

IS IT THE MANY OR THE FEW WHO HAVE CHANGED?

So many times during the last year we have been told the story of extravagant spending that it is pleasant to have the Savings Division of the Treasury give us this more cheerful word. It has taken some courage, at times, to refuse to buy because too much has been charged for an article, but if this refusal has been even a small factor in lowering prices the sacrifice has been well worth while.—THE EDITOR.

No fact is more significant at this time than the changed attitude of the American consumer in the purchase of the everyday needs of life. A year ago the public was buying everything in sight regardless of the cost. Most of us were so influenced by the price mark on the goods that unless the price was high we looked upon the article with suspicion, and refused to take it, but the public has been doing some thinking lately, and thinking is still the individual's chief weapon of economic defense.

Women have been going to market in the old-fashioned way with market baskets on their arms. They have picked up the cantaloupe, the berries, and the cuts of meat and looked them over. If the quality and the price were not satisfactory they refused to buy. They have gone into department stores in a similar way. If they found the price exorbitant and the quality ordinary, they have had the courage to walk out. If they could not find what they wanted at a reasonable price they decided to forego the purchase and to wait until the price came down.

Women have been figuring out how much they are justified in spending for the maintenance of the home. They have been budgeting their incomes and keeping an account of their expenditures. They have been studying the value of foods and clothes, realizing that the greatest business of the nation, namely the purchase of food and clothing and other household necessities, must be run on the same business-like principles as a commercial enterprise.

In the face of an awakened public conscience the price of commodities must be justified by the fundamental economic principles which should determine prices. The producer or dealer who would violate these principles and profiteer upon the people cannot continue to do business with the American public.

The essential thing now, in view of the recent tendency to reduce prices, is that the public should be fair both with themselves and with

business. If people rush in and over-buy because goods are being reduced, or if they expect prices to be reduced below the point of normal profit to producers and dealers, they will create another economic condition as unfortunate as the one from which we are just emerging. While we are protecting our private pocketbooks against the American tendency to extravagance and against unscrupulous profiteers we must not lose confidence in legitimate business. Business must be supported in order to live. It must be liberally supported in order to be healthy.

The American public has in its efforts to reduce prices during the past few months shown a large degree of economic sanity. It is important that the same degree of sanity be practiced now in this new condition which the reduction of prices is bringing about.

A SCORE CARD FOR FARM DWELLINGS

ALICE POULTER

Formerly of the Division of Extension, Kansas Agricultural College

Women in rural communities, now that renewed attention is given to building and remodelling farm houses, may find of value such a means of judging their own and other dwellings as is given by the use of a score card. Although it is comparatively easy to find score cards for other buildings, score cards for farm dwellings do not seem to exist. Perhaps it would not have occurred to me to prepare such a card had not the need arisen in connection with an auto tour for Kansas farm girls, undertaken in Montgomery county. The tour is described in *The Breeder's Gazette* by "One of the Tourists" somewhat as follows:

For a number of years it has been the custom in many places for county agricultural agents to conduct boy's hikes, in which a group of boys, accompanied by one or more agricultural authorities, visited various farms to observe improved methods of handling different farm problems. The agricultural agent of Montgomery county in Kansas, thinking that the girls of the county deserved as much consideration as their brothers, planned three auto tours of one day each for them, thus giving the girls an opportunity of learning something of the con-

veniences to be found in the modern homes of their own county, and at the same time to secure a broader understanding of matters relating to the home.

Each day's trip was in a different part of the county, and each group was accompanied by the county agent and the home economics specialist from the Division of Extension of the Kansas Agricultural College. The itinerary of each day included a visit to a standard rural school, a farm where good beef cattle are produced, a modern dairy farm, a poultry plant, several modern homes, and other points of general interest. Each girl provided her own dinner, and each was asked to take with her a note-book and pencil, and to make a brief written report to the county agent, describing the best dairy, the best sewage disposal plant, the best water supply system, the best poultry plant, and the best farm kitchen, giving the reason why each was the best, and a description of a modern rural school.

At the beginning of the day's work each group was given suggestions as to points to be considered when studying the farm house, and a score card was devised in order to have a uniform basis upon which to work. The housewife was asked to criticise her own house, giving reasons for her criticism, and many points were mentioned which the girls might otherwise have missed. Discussion with the user often has more force than anything teachers may say. Special attention of the visitors was called to devices for securing a convenient water supply, and disposing of waste, and to the lighting and heating facilities in many of the homes.

The home economics specialist answered questions relating to home management and home sanitation, and explained the action which takes place in the septic tank, the points to be considered in the making of good butter, the value of the tuberculin test in the dairy herd, and other subjects of special interest. Others who accompanied the girls gave talks about canning, poultry raising, storing meat for summer use, favorite home conveniences, and various topics of vital interest to the young people, using the things seen on the trip to emphasize and illustrate the various points. The county agent discussed the judging of beef and dairy animals, calling attention to the location of the different cuts of meat, and each girl was asked to judge a group of dairy cows.

The score card for dwellings calls to mind the following paragraph from the life of Ellen H. Richards by Caroline L. Hunt:

"In the summer of 1908 I was visiting at her house when she received from Professor John R. Commons an advance copy of his Score Card for Houses, with a request that she criticise it. She handed it to me

and asked me to score her own house; and having made the necessary examination and measurements, I had the pleasure of handing it back to her with a perfect score marked upon it."

A score card for farm dwellings

Location.....				20
Drainage.....			5	
Exposure.....			5	
Relation to other buildings.....			10	
Construction.....				20
Foundation.....			5	
Durability of material.....		2		
Suitability of form and weight for the building.....		3		
Cellar.....			5	
Size suited to use.....		1		
Depth.....		2		
Finish.....		2		
Roof.....			5	
Material.....		3		
Durability.....	2			
Inflammability.....	1			
Style.....		2		
Body of house.....			5	
Material.....		3		
Interior construction, wall and wood finish.....		2		
Arrangement.....				30
Relation of rooms to each other.....			5	
Relation of rooms to outside buildings.....			5	
Lighting and ventilation, windows, artificial lighting, arrangement of same.....			10	
Water supply in kitchen, in bath room, in laundry.....			5	
Sewage disposal.....			5	
Equipment.....				30
Kitchen (modern conveniences).....			10	
Bath room.....			5	
Laundry.....			10	
Other rooms.....			5	
			100	100

NOTE: In connection with "relation to other buildings" under "location," attention should be given especially to the poultry and dairy buildings, and in case of outdoor toilet to that building also, keeping in mind the direction of prevailing winds and the comfort of the worker as well as economy of time. This also enters into the relation of rooms to outside buildings under "arrangement." Under "laundry equipment" consider power, heating facilities for water and irons, disposal of waste water, provision for drying clothes in bad weather.

EIGHT HOUR SERVICE

At a Conference on Group Living held at Lake Placid in May it was thought worth while to spend one afternoon on the discussion of the eight hour service for households, both large and small.

The scarcity of supply of household employees, and the abnormal situation induced by the bidding and over bidding of employees offers sufficient reason for considering changes in the system of household employment. From the employees point of view the reasons for the shrinking supply are found in the significant lack of standards of working conditions in household employment as compared with other industries and forms of business; and the desire for freedom from restraint imposed in many instances in resident service. The opportunity to live in a home of one's own choosing with all the attending social compensations, regular hours of employment and more systematized planning of work, and the opportunity for recreation at hours corresponding to those of friends in other occupations would mean a change in attitude toward domestic work.

One of the many experiments tried has been that of the Employment Department of the Central Branch of the Y. W. C. A. in New York City, which has experimented for the last year or more in placing home assistants, that is nonresident workers, on an eight-hour day and forty-four hour week. Regular holidays or equivalent time free with full pay and paid vacation on the basis of a minimum of two weeks for a year of service are to be given by employers. Any work may be required except heavy washing; the employee lives, sleeps, and eats away from the place of employment (or when necessary carries a luncheon) and is called by her last name and title. The wages are on a sliding scale, not falling below the current minimum wage standard, and the car fare is paid by the employee.

A consulting station has been established where information and assistance may be obtained by housewives who are considering or using eight hour service. Charts, schedules, and time studies compiled by housewives who have tested them and proved them to be practical, are available.

Boston and Worcester, Mass., Hartford, Conn., and Providence, R. I., are experimenting in the same direction.

A LESSON IN COSTUME DESIGN¹

The Home Economics Class, High School, Bridgeville, Delaware

For a tall thin girl dressed in a tight dress with long lines and stripes:

There was a young lady from Lynn
Who was so unusually thin,
In vertical lines she resembled the pines,
In circular lines she would win.

For a stout short girl who wears ruffles:

Now here's a young lady from Pratt
Who's inclined to be rather fat.
Now ruffles are found to make her look round
But she's never thought about that.

Illustrating some angles at which hats are worn:

I am pretty but not very wise,
My gown by itself takes the prize,
But I wear my chapeaux right over my nose,
And extinguish my fetching bright eyes.

These hats that are worn too far back,
Rest about where you'd carry a pack.
Now wouldn't you love just to give them a shove,
And procure them the style that they lack.

A lesson in fitting hat crowns to the head size:

Behold my hat is much too small
Although it's just the rage this fall.
On some folks here, 'twould look quite dear,
But me it does not suit at all.

This lady is pretty and trig,
But the crown of her hat is too big.
It makes her look small, when she wants to look tall,
And spoils the effect of her rig.

¹ Given before the Woman's Club of Bridgeville, Del.

EDITORIAL

The Journal of Home Economics believes it has the honor of being practically the last magazine in the United States to raise its price. It fought against the evil day as long as possible, but increased cost of paper, printing, and labor—you know the tale—has forced it to yield. The printer's bill constantly grows larger. Even the cost of printing advertisements has come dangerously near the receipts from them. So from January first the price must be two dollars and fifty cents a year.

The JOURNAL has ambitions. It wants to double its space, to triple its advertising, to quadruple its number of subscribers, and to multiply indefinitely its value. It presents its acknowledgments to those who have contributed to its columns, to the many who have sent kind letters of appreciation, perhaps most of all to its critics. But if its ambitions are to be realized it must have still more help. If its space could be doubled there would be fewer complaints that one or more interests are not adequately represented. One letter says that too much of the JOURNAL is especially for teachers, another letter that there is not enough for teachers. One letter asks that more space be given to institution work, another wants more individual research, another wishes educational material. If the JOURNAL could contain one hundred pages a month it would be much more possible to satisfy the demands of each individual interest.

Another thing is necessary to satisfy these demands. Material representing these different interests must be sent to the JOURNAL. Often the criticism that comes is fundamentally not a criticism of the JOURNAL but of home economics workers. Institutional workers must contribute institutional material. No one else can do it. Teachers must send the material most useful for teachers. There are surely many who could give most valuable help who simply do not think of writing for the JOURNAL.

To run such an enlarged JOURNAL would take more money. Unless the JOURNAL can be endowed, more money must come from more advertising and more subscribers. It would be comparatively easy to

get more advertising if we had more subscribers. More advertising would also react to bring more subscribers, particularly if the advertising were of equipment and utensils about which the home economics workers may not readily learn otherwise.

If as a small beginning each reader of the JOURNAL will endeavor to get at least one new subscriber during the coming year, if she will see how she can contribute to the value of the JOURNAL by sending even a question, a news item, or a letter to the Open Forum, if she cannot contribute an article, the JOURNAL will have made a fair start toward greater helpfulness and better success.

The JOURNAL wishes all its readers a Merry Christmas and a Happy New Year—and it is so bold as to ask that it may be placed on the Christmas list of each one to receive a subscription, a contribution, or even a letter.

Home Economics Publicity. The attention of every home economics worker should be especially given to the statement in Mr. Harlan Smith's article, in this number, in regard to the need of funds by the Department of Agriculture for printing material that is already prepared. One cannot visit the Office of Home Economics without being impressed with the value of unpublished charts held for lack of money, with the bulletins that have been prepared and not published, with the work whose recorded results are inaccessible. Much helpful material in that office can be available at present only for those who are able to visit the office in person.

The American Home Economics Association is certainly the association above all others that should take up this matter, and that should see that in this next administration, that will undoubtedly be one of economy, a true economy is exercised, not the wastefulness of making useless a large amount of valuable work that has already been accomplished and that should be made usable for every worker in the field.

THE OPEN FORUM

A Household Science Honor Society.—It may be of interest to readers of the JOURNAL to know that a local honor society in household science has been in existence at the University of California since 1915. This society is called Alpha Nu, and elects to its membership seniors in their last term and graduate students in household science. Only the

scientific phase of home economics is thus included. This division follows from the division in instruction in this institution into the two departments of household science and household art.

The Alpha Nu honor society has as its chief object the promotion of interest and progress in all scientific fields which may be made of value to the household. The most important and fully developed of these fields are of course the chemistry of food and nutrition, physics and chemistry of cooking, bacteriology of food preservation, engineering problems of lighting, heating, ventilation, labor-saving devices, and work routine.

It has become the custom of the Alpha Nu society to select year by year some topic from one of these fields for detailed discussion, organization, and representation in written form to the members and to others interested in these matters. Self-conducted seminar meetings are held fortnightly throughout the year for this purpose.

The first problem undertaken was that of the so-called "household chemistry" course often considered a valuable part of the high school student's training. During three semesters the seminar meetings were devoted to the preparation of a syllabus for such a course, to consist of one term of general introduction in the principles of chemistry, and one term of applied organic or domestic chemistry. This syllabus was multigraphed and distributed in the spring of 1917.

The second problem attacked was that of a similar syllabus of a course in household science for the high school, to include the principles of food preparation, dietetics, and home management, with an assumed prerequisite or parallel course in general chemistry. This work was begun in the fall of 1917, and completed in the spring of 1919 and was necessarily carried on by a number of different groups. This syllabus also has been multigraphed and distributed.

The society is now engaged in the similar preparation of a detailed outline of experiments possible for use in a high school course in dietetics.

Open meetings are occasionally held by the society, and a semi-annual news letter is circulated among its members.

It would be interesting to know whether conditions are favorable in any other institutions for a similar organization.

AGNES FAY MORGAN.

BOOKS AND LITERATURE

Household Arithmetic. By CATHERINE F. BALL AND MIRIAM E. WEST. Edited by B. R. Andrews. Phila.: J. B. Lippincott Co., 1920, pp. 271. \$1.48.

The problems of this *Household Arithmetic* have been selected from the home economics field, and the contents have been based on the family budget. Thus the subject matter falls in six divisions.

The first division takes up budgets and accounts, both personal and household. The problems are good live problems which ought to interest any girl in the eighth or ninth grades. This division of the book should be given first. The other five divisions may be taken in any order desired. If a class were studying foods with their home economics teacher, the fourth division on foods might well be used in the arithmetic class.

The second division deals with the cost of shelter, bringing up the discussion of home ownership versus renting, the cost of repairs, with many practical problems in plastering, painting, and flooring.

The third division is on cost of operating expenses. Its problems concern the cost of fuel, how to read a gas and an electric meter and compute the bill, the cost of up-keep of furnishings, and practical problems on the cost of service.

The division on clothing starts out with planning a clothing budget for the different members of the family, with problems that should appeal to the average girl. The comparison of homemade versus ready-made clothing, as to the cost of material and the time required, is made. The illustrations in this chapter show how to apply patterns, how to cut bias strips of cloth, and the amount of bias that may be obtained from different widths of cloth.

The chapter on foods gives a short discussion of household weights and measures, tabulated in clear concise tables. Some simple marketing problems bring home the actual cost of foods, not only on a calorie but a quantity basis. The discussion of fundamental dietary principles is brief and to the point. The whole of this chapter might well be used by any high school class in dietetics.

The last chapter, on higher life, brings in methods of business life about which every girl should know. The discussion of saving and investment shows how rapidly interest accumulates on small deposits; different methods of savings are discussed, such as postal savings, savings accounts, stocks, bonds, and life insurance, with a statement as to what life insurance means, how the policies differ, and the value in dollars and cents of these different kinds of policies. Other topics include buying a home as saving, how money may be borrowed on a home and on notes, and some practical problems in improving health conditions. This section also deals with higher life as related to recreation and education, showing how the earning capacity of a girl is increased by education. It shows the actual cost of equipment for such sports as tennis, and takes up problems which bring home to the girl what simple, healthful, outdoor recreations cost, as compared with recreation of a less valuable character.

The book is valuable both in the upper grades and in the high school. Indeed it was worked out experimentally by its authors in their own high school work. Individual chapters might well be used by home economics teachers as a source of interesting problems to introduce into classes in food, clothing, and management.

FRANCES R. KELLY.

Massachusetts Household Account Book.

Prepared by LAURA GIFFORD, Mass. Agr. College, Amherst, 3rd ed., 1919, pp. 40.

Budget Planning in Social Case Work.

Report written by EMMA A. WINSLOW, Committee on Home Economics, The Charity Organization Society, 105 E. 22nd Street, New York City, 1919, pp. 31. \$0.15.

Modern Magic. By CARO D. COOMBS.

Boston: Whitcomb and Barrows, 1920, pp. 60. \$0.50.

The Massachusetts book presents a very simple form for the keeping of household accounts. The sheets have the columnar divisions and the headings used are: Meat and Fish; Milk, Cream, Butter; Fruits, Vegetables; Other Groceries; Guests; Clothing; Household Furnishings; Operating Expenses; House and Heat; Health; Incidentals; Benevolences; Advancement; and Recreation.

In the introduction a full subdivision is given so that there is no question as to what the various headings are intended to include. Food is particularly stressed in this book; it is the only classification which is subdivided, and also in the introduction there are several suggestive sentences under the heading, "Money Spent for Food."

The book is simple, clear, and concise and should appeal to the housekeeper.

Budget Planning in Social Case Work shows the need and advantage of a full analysis of the resources and expenditures of the family who cannot make its income reach. Miss Winslow points out very forcibly the fact that particular needs alter the budget decidedly and that there is no standard budget that can be applied to all, but that each case must be studied and prescribed for individually.

The clear exposition of the factors entering into budget making brings out many points which a person without wide experience in the adjustment of family expenditures is apt to overlook.

The pamphlet is intended, as its title implies, as an aid to budget making for de-

pendent families, but the general principles which are set forth would also be of great value in adjusting the finances of independent families on any income level.

Modern Magic treats budgeting and accounting from a most happy viewpoint. Its optimism is so convincing that after reading it one feels quite sure that a budget will go a long way towards materializing one's wants and desires.

The arrangement of the account sheets is a bit different from usual. A double page takes care of food and ice for each month and another double page allows for the entries of rent, housekeeping expenses, clothing, and personal expenses. The allotment of space is well planned for the usual number of entries for each classification and division of the income. After keeping accounts in this book, a glance will show what one wants to know about expenditures.

In *Modern Magic*, Miss Coombs has given us not only a very practical and usable account book but also a most stimulating approach to the budget.

Household Weights and Measures. U. S.

Dept. Commerce, Bur. of Standards, Miscellaneous Publication, No. 39, April, 1920.

As if in answer to the perplexed housekeeper's inquiries, "How many tablespoons are there in a cup?" and, "How much does a cup of flour weigh?" the Bureau of Standards has compiled this kitchen card and had it printed for free distribution. In addition to the tables of common kitchen measures, approximate weights of some common dry commodities and other materials, a brief explanation of the international metric system, and common rules of measurement, it contains a table of heights and weights of children, furnished by the Children's Bureau of the United States Department of Labor. The card is printed especially for household use, so it states, but home economics workers in many fields will find it a useful addition to their reference material.

NEWS FROM THE FIELD

The Ohio Home Economics Association at its meeting with the State Teachers' Association at Cedar Point, Ohio, June, 1920, Edna Endly, president, presiding, endorsed the "French Truth in Fabrics Bill" now pending in congress.

In a discussion of the value of surveys to home economics, Edith Dickson, who had charge of the School Lunch Survey, made the following recommendations: (1) That no lunch be run under private management, and that funds from the lunch room be not spent for irrelevant equipment. (2) That there be follow up work so that the value of the lunch to the school child shall be known. When the lunch work is started the health record of the children should be kept and at intervals the children should be weighed, and special emphasis laid on the normal development of each child. (3) Sanitation and hygiene should be applied and health habits established as part of the school work. There should be careful supervision of the sanitary conditions of the lunch room and kitchen and medical examination of the employees. There should be proper facilities for the children to wash their hands before lunch and these facilities should be used.

Treva E. Kauffman spoke on the survey as applied to home economics instruction in public, private, and religious schools, social centers, Red Cross, and commercial institutions, and the following recommendations were made: (1) That all phases of home economics education be emphasized and that the work be not confined to merely cooking and sewing. That the home project be used as an effective method of teaching home making. (2) That well trained teachers be provided, who have a viewpoint on the vocation of homemaking. (3) That more adequate equipment be provided. (4) That

more provision be made for giving short courses in homemaking to girls and women through the part time and evening school.

From the results of the survey as applied to the food served in such institutions as the county jail, county prison, homes for the aged, children's homes, there was the recommendation that there should be better supervision with trained people in charge, or a state or county dietitian to supervise the planning of meals in all public institutions, thus making for economy and efficient nutrition.

The opportunities that open before the home economics teacher, and the future possibilities of the State Association were presented, and the general session resolved itself into Round Tables for the more intimate discussion of pressing problems.

Pratt Institute. Helen Hollister is serving this fall as acting director of the School of Household Science and Arts at Pratt Institute. No permanent appointment has been made to fill the place made vacant by the resignation of Isabel Ely Lord, who for ten years has been the Director, and who has been a member of the Institute for seventeen years.

During her service she accomplished successfully the difficult task of reorganizing the School of Domestic Science and the School of Domestic Arts so that the work of both might be conducted as a single school, and at the same time raised the educational standard. All who have been associated with Miss Lord at the Institute, regret her loss and join in extending to her the most cordial good wishes, and those who have worked with her in home economics hope that the new work she chooses may be in the same field.

University of Illinois. Prof. Isabel Bevier received the honorary degree of Doctor of Science from Iowa State College, Ames, at the June commencement. Miss Bevier, who resigned from the University of Illinois at the end of the last academic year, consented to remain in charge of the Department of Home Economics until February 1, 1921.

The Chicago School of Civics and Philanthropy has always stood in close relation to the American Home Economics Association, partly because we, like many other social agencies, have a common object—the betterment of the home, and partly because one of our honored members has been one of the directors and founders of the school. That school has now become a part of the University of Chicago as a Graduate School of Social Service Administration. Dr. S. P. Breckinridge and Dr. Edith Abbott have been appointed associate professors in the school, Erle F. Young an instructor, and Elizabeth S. Dixon has been made Supervisor of Field Work.

Phi Upsilon Omicron. The JOURNAL is happy to extent to Phi Upsilon Omicron, one of the national professional home economics fraternities, the same courtesy that has already been given to Omicron Nu in publishing items of fraternity news. Phi Upsilon Omicron issues a publication of its own, *The Candle*—that has been noted in the JOURNAL, but asks the opportunity of keeping in closer touch with the American Home Economics Association and the readers of the JOURNAL.

Phi Upsilon Omicron held its annual conclave in Colorado Springs, last June. Aside from routine business, the conclave program included the consideration of several matters of importance both to the fraternity and to home economics.

There were many evidences that the fraternity is making progress in its aim to promote the profession. Two chapters, Alpha and Epsilon, maintain fifty dollar scholarships

in their respective institutions, available to students in home economics. The two chapters maintaining fraternity houses showed ways in which these houses contribute to the Home Economics Department. A third chapter is about to open such a house. Gamma chapter reported having given twenty-five dollars to the fund for the establishment of a chair of home economics in the Woman's College at Constantinople. The conclave recommended that each chapter contribute to this fund not later than November first. Acknowledgment was received from Dr. Andrews of a contribution to the Ellen H. Richards Memorial Fund made from the interest on the fraternity's national permanent fund.

One of the best addresses of the session was that given by Edna N. White, president of the A. H. E. A. and an honorary member of the fraternity, on "Professional Attitude." A resume of the address will be printed in *The Candle*.

Every active and alumnae organization sent its full quota of delegates, and other members, active, alumnae, and honorary, attended in sufficient numbers to more than double the official representation of the chapters and every one remained in Colorado Springs at her own expense to attend the American Home Economics Association meetings.

Oh July 3, Eta chapter of Phi Upsilon Omicron was installed in the State Manual Training Normal School, Pittsburg, Kansas. The charter members are young women of the big, professionally minded type, and are sure to be a source of strength to the fraternity. The infant chapter launched out at once to share in the fraternity's oldest piece of national professional work by giving 100 per cent subscription to *The Candle*.

The American Home Economics Association will hold a meeting in connection with the meeting of the Division of Superintendence, N. E. A., at Atlantic City, February 26 to March 3, 1921.

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Abbreviations used are: Ed.—Editorial; h. e.—home economics; O. F.—Open Forum; Q. B.—Question Box.

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KATHARINE BLUNT AND CHI CHE WANG

ADVANCES IN FOOD SELECTION AND
PREPARATION

MABEL T. WELLMAN

TRAINING CHILDREN AS LABORATORY WORK
ELIZABETH VERMILYE

FOR THE HOMEMAKER

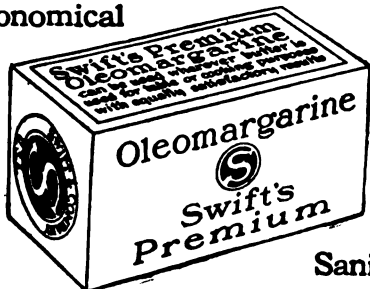
HOUSEHOLD ACCOUNTING

ELLA KAISER CARRUTH

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Mrs. Knox's Page

A Christmas Dessert and Candy

AFTER eating a hearty Christmas dinner have you ever felt that the Plum Pudding was just a little too much? I have, and began experimenting on a recipe that would avoid the heaviness of the meal and yet be so palatable and attractive that it would add just the finishing touch to it.

I have found that this fruited Plum Pudding, which requires so little time and trouble to make, and saves standing over a hot stove, is the very thing that appeals to all members of the family. Decorated with a bit of holly, it carries out the spirit of Christmas, and while I call it a Christmas Plum Pudding, you will find it suitable for any dinner.

I am also giving you a recipe for Christmas candy that I am sure you will find dainty, delicious, and which will add pleasure to your day.

CHRISTMAS PLUM PUDDING

1 envelope Knox Sparkling gelatine	1 cup seeded raisins	1½ squares chocolate or 5
½ cup cold water	½ cup dates or figs	tablespoons cocoa
1 cup sugar	½ cup sliced citron or nuts	Pinch of salt
½ teaspoonful vanilla	½ cup currants	1 pint of milk

Soak the gelatine in cold water for five minutes. Put milk in double boiler, add melted chocolate or cocoa which has been stirred to a paste in a little water, and when scalding point is reached add sugar, salt and soaked gelatine. Remove from fire and when mixture begins to thicken add vanilla, fruit and nuts. Turn into mold, first dipped in cold water, and chill. Remove to serving dish and garnish with holly. Serve with whipped cream, sweetened and flavored with vanilla.

CHRISTMAS CANDY

2 envelopes Knox Sparkling Gelatine	1½ cups boiling water
4 cups granulated sugar	1 cup cold water

Soak the gelatine in the cold water five minutes. Add the boiling water. When dissolved add the sugar and boil slowly for fifteen minutes. Divide into two equal parts. When somewhat cooled add to one part one teaspoonful extract of cinnamon. To the other part add one-half teaspoonful extract of cloves. Pour into shallow tins that have been dipped in cold water. Let stand over night; turn out and cut into squares. Roll in fine granulated or powdered sugar and let stand to crystallize. Vary by using different flavors such as lemon, orange, peppermint, wintergreen, etc., and different colors, adding chopped nuts, dates or figs.

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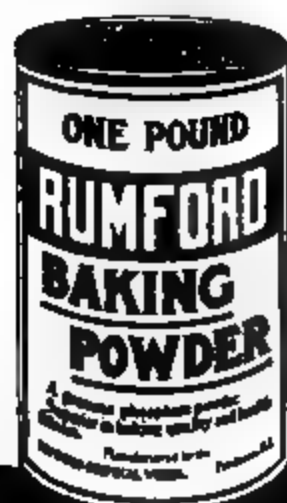
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